

Canadian Paramedic Services Standards Report: A Strategic Planning Report

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CSSP-2012-CD-1044 EMS

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DRDC-RDDC-2014-C192

June 2014

IMPORTANT INFORMATIVE STATEMENTS

CSSP-2012-CD-1044 EMS National Standards Strategy was supported by the Canadian Safety and Security Program (CSSP) which is led by Defence Research and Development Canada's Centre for Security Science, in partnership with Public Safety Canada. The project was led by Paramedic Chiefs of Canada in partnership with Canadian Standards Association and Paramedic Association of Canada.

CSSP is a federally-funded program to strengthen Canada's ability to anticipate, prevent/mitigate, prepare for, respond to, and recover from natural disasters, serious accidents, crime and terrorism through the convergence of science and technology with policy, operations and intelligence

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Prepared by the Paramedic Standards Steering Panel

March 2014



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1. Foreword

Paramedic Services are recognized as a core service by municipal and provincial/territorial governments. However in practise, the scope, organization, and responsibilities of individual paramedic units can vary widely from jurisdiction to jurisdiction. The relatively few standards for the Canadian paramedic community have largely been driven by the regulatory process or by US standards-setting bodies, with little engagement from the Canadian paramedic community.

Standardization can play a foundation role in helping the Paramedic Chiefs of Canada (PCC), the recently established Paramedic Community of Practice, and Paramedic Association of Canada (PAC) address the growing challenges of paramedic services in Canada. This Standardization Strategy Report is part of a project funded through the Canadian Safety and Security Program (CSSP) Community Development Investment Category. Through this project PCC and PAC have worked in collaboration with the Canadian Standards Association (operating as CSA Group) to research literature, obtain stakeholder feedback, and to develop recommendations for the strategic direction for standards development in the area of Paramedic Services for Canada.

Standardization can include: standards development, conformity assessment of products and personnel, application tools, and education and training. Accordingly, the focus of this Standardization Strategy Report is to comprehensively identify, inventory, and assess existing standards, relevant codes and regulations, and related guidance and best practices material, ascertain gaps and recommend strategic solutions. This includes identification of prioritized areas of focus and a transition/communications plan to guide the next steps.

It is important to emphasize that the focus of this Standardization Strategy Report is not merely to identify gaps and then to suggest development of new standards to fill them. Rather, it is also to identify opportunities where gaps potentially can be filled by revising or harmonizing existing standards or to point to work taking place through other initiatives that will fill the identified gaps.

It is important to acknowledge and thank the volunteers from Paramedic Chiefs of Canada, Paramedic Association of Canada and other stakeholders who have contributed to this project for their participation and sharing of expertise and suggestions. In addition to the members of the Paramedic Standards Steering Panel noted below, we are most grateful to those members of PCC and PAC who responded to the stakeholder survey and provided valuable feedback and insight.

Members of Paramedic Standards Steering Panel

Andrew Robert	Director and Chief, Paramedic Services Simcoe County
Rene Bernklau	President, Association of Canadian CBRNE Technicians
Mike Fisher	Allied Medical
Greg Furlong	Superintendent, Ottawa Paramedic Service
Chris Hood	President, Paramedic Association of Canada
Ken Luciak	Director, EMS Regina Qu'Appelle Health Region

Kelly Nash	Executive Director, Paramedic Chiefs of Canada
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Pierre Poirier	Chief, Security and Emergency Management, City of Ottawa
Penny Price	Director, Regional Paramedic Program, Eastern Ontario
Doug Socha	Paramedic Portfolio Manager Centre for Security Science, Defence Research And Development Canada
Allan Stephen	President and CEO, Ambulance New Brunswick

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2. Executive Summary/Sommaire

This Standardization Strategy Report is the final document for a project championed by The Paramedic Chiefs of Canada (PCC) and the Paramedic Association of Canada (PAC), with the support of the Canadian Standards Association (CSA) and the Canadian Safety and Security Program (CSSP). This project brought together key experts from the Canadian Paramedic Community to develop a roadmap and strategic direction for the coordination and development of Canadian Paramedic Services standards. This project supports the broader strategic initiatives of PCC, PAC and the Government of Canada.

The goal of this document is to provide a comprehensive report to advance the standards environment from the limited number of existing standards and guidelines available for Paramedic Services in Canada today to the current and future needs of the Canadian Paramedic Community. This Standardization Strategy Report covers the need for Canadian Paramedic standards. In addition to specifying key priorities for standards, the Standardization Strategy Report outlines recommendations to accomplish the goals and to bridge the gaps, as well as important areas of work including a communication strategy.

The Standardization Strategy Report provides a Framework for standards in this subject area and organizes it into 8 main elements and a number of sub-categories which formed the basis for the research and analysis undertaken. The 8 main elements are:

1. Equipment
2. Facilities
3. Paramedic Services
4. Personnel
5. Communications
6. Program Management
7. New Technology
8. Emergency Management

Section 4 of the Standardization Strategy Report contains a brief overview of the standards system in Canada. In Section 5, the results of the research and consultations are summarized and recommendations for priority areas and further work are highlighted for each main element in the Framework. The Standardization Strategy Report also contains several Annexes which contain the results of a detailed literature review and inventory of over 600 references of relevant standards, regulations, and best practice documents relating to Paramedic Services in Canada and internationally and the results of a web-based survey of the Paramedic Community in Canada. A communications /transition plan along with the key priorities and important areas of work are also included to help put the recommendations into practice.

While this Standardization Strategy Report represents a specific snapshot in time, it is intended to be a document which points toward the future and helps to facilitate discussions with stakeholders about standardization work. Through this project, a CSA Group Paramedic Standards Steering Panel has been established to provide ongoing strategic leadership on standards development. Depending upon the needs of stakeholders, and available resources, periodic updates on paramedic standardization activities and progress to address the gaps identified in this Standardization Strategy Report will be made. Issues that are new or that require further discussion will be explored by the Panel. The aim behind these efforts will be to continue to help guide, coordinate, and enhance the standards landscape as needed to support the evolving needs of the Paramedic Community in Canada.

Path Forward on Standards for Canadian Paramedic Services: Strategic Recommendations

1. The CSA Group Paramedic Standards Steering Panel established as part of this project would continue to provide leadership and strategic oversight for the development and implementation of priority standards solutions. This Panel will champion and promote Canadian standards activities and maintain the Roadmap created through this project. This will also include direction on activities to communicate the results of this project.
2. The Paramedic Standards Steering Panel has identified the following as the top 5 priority areas for standards work:
 - Infection Prevention and Control
 - Paramedic Mental Health
 - Call taking and dispatch
 - Ambulance equipment and supplies
 - Community Paramedic Programs
3. The Paramedic Standards Steering Panel has identified 2 additional areas as being important for future standards work:
 - Triage Systems
 - Educator Education Standards
4. It is critical that the implementation of the Standards Roadmap be aligned with other work being undertaken by the Paramedic Community of Practice, the Paramedic Chiefs of Canada and the Paramedic Association of Canada. To achieve the goals of the Roadmap, it will also be imperative to develop liaisons with relevant public safety and first responder organizations, standards setting organizations, and stakeholder groups.
5. For any new standards projects identified by the Paramedic Standards Steering Panel, CSA Group should take appropriate steps to file notices of intent with the Standards Council of Canada.

Le présent rapport sur la stratégie de normalisation est le dernier document d'un projet parrainé par l'Association des paramédics du Canada (APC) et du groupe des chefs de services paramédicaux du Canada (CSPC), avec l'appui de l'Association canadienne de normalisation (CSA) et du Programme canadien pour la sûreté et la sécurité (PCSS). Ce projet a réuni des experts clés de la communauté canadienne du personnel paramédical afin d'établir une feuille de route et une orientation stratégique pour la coordination et l'élaboration de normes en matière de services paramédicaux au Canada. Il appuie les initiatives stratégiques plus larges de l'APC, des CSPC et du gouvernement du Canada.

Sommaire

Ce document vise à fournir un rapport global pour faire évoluer l'environnement de normalisation, allant du faible nombre de normes et de directives existantes pour les services paramédicaux actuels au Canada aux besoins présents et futurs de la communauté canadienne du personnel paramédical. Ce rapport sur la stratégie de normalisation traite du besoin en matière de normes paramédicales au pays. Outre les grandes priorités liées aux normes, il contient des

recommandations pour atteindre les objectifs et combler les lacunes, de même que des domaines d'action importants incluant une stratégie de communication.

Le rapport sur la stratégie de normalisation fournit un cadre pour les normes dans ce domaine et permet de les organiser selon huit éléments principaux et un nombre de sous-catégories qui constituaient le fondement de la recherche et de l'analyse effectuées. Les huit éléments principaux sont les suivants :

1. Équipement
2. Installations
3. Services paramédicaux
4. Personnel
5. Communications
6. Gestion des programmes
7. Nouvelle technologie
8. Gestion des situations d'urgence

La section 4 du rapport sur la stratégie de normalisation explique brièvement le système de normes au Canada. Dans la section 5, les résultats de recherche et de consultation sont résumés et des recommandations concernant les secteurs prioritaires et les travaux futures sont mises en lumière pour chaque élément principal du cadre. Le rapport sur la stratégie de normalisation comprend également de nombreuses annexes contenant les résultats d'une analyse documentaire détaillée, un inventaire de plus de 600 références (normes pertinentes, directives et documents sur les pratiques exemplaires) liées aux services paramédicaux au Canada et à l'étranger, de même que le résumé d'un sondage en ligne de la communauté canadienne du personnel paramédical. Le plan de communications/de transition, les priorités essentielles et les domaines d'action importants sont également inclus afin d'aider à l'application des recommandations.

Alors qu'il représente un profil instantané dans le temps, ce document pointe vers l'avenir et facilite les discussions sur le travail de normalisation avec les intervenants. Dans le cadre de ce projet, un comité directeur sur les normes paramédicales du Groupe CSA a été créé afin d'assurer un leadership stratégique continu sur l'élaboration de normes. Selon les besoins des intervenants et les ressources disponibles, des mises à jour périodiques sur les activités de normalisation des services paramédicaux et les progrès sur ce plan pour combler les lacunes indiquées dans ce rapport seront faites. Les nouveaux enjeux ou ceux suscitant d'autres discussions seront examinés par le comité. Ces efforts continueront d'aider à orienter, coordonner et améliorer le contexte des normes selon le cas pour appuyer les besoins changeants de la communauté canadienne du personnel paramédical.

La voie à suivre pour les normes sur les services paramédicaux au Canada : recommandations stratégiques

1. Le comité directeur sur les normes paramédicales du Groupe CSA créé dans le cadre de ce projet continuera d'offrir un leadership et un aperçu stratégique de l'élaboration et de la mise en œuvre de solutions concernant les normes prioritaires. Il encouragera et fera la promotion d'activités canadiennes liées aux normes, en plus de maintenir la feuille de route établie pour ce projet. Il fournira également une orientation concernant les activités afin de communiquer les résultats du projet.

2. Selon le comité directeur sur les normes paramédicales, les cinq domaines prioritaires pour les travaux de normalisation sont les suivants :

- Prévention et contrôle des infections
- Services paramédicaux de santé mentale
- Réception des appels et répartition
- Équipement et fournitures d'ambulance
- Programmes paramédicaux communautaires

3. Selon le comité directeur sur les normes paramédicales, deux autres domaines sont importants pour les travaux de normalisation :

- Systèmes de triage
- Normes d'instruction pour les éducateurs

4. Il est essentiel que la mise en œuvre de la feuille de route pour l'établissement de normes soit harmonisée à d'autres travaux entrepris par l'APC, les CSPC et le Groupe CSA. Pour atteindre les objectifs de la feuille de route, il sera également primordial d'établir des liens avec des organisations de premiers intervenants et de sécurité publique, des organismes de normalisation et des groupes d'intervenants pertinents.

5. Pour tous les nouveaux projets de normalisation déterminés par le comité directeur sur les normes paramédicales, le Groupe CSA doit prendre les mesures appropriées pour présenter des avis d'intention au Conseil canadien des normes.

3. Background

The purpose of this project is to identify the most appropriate areas for future work in terms of standards development, best practices and application tools. This Standardization Strategy Report is part of a project funded through the Canadian Safety and Security Program (CSSP) Community Development Investment category.

This project consisted of the following phases and deliverables:

- 1) Literature review and development of a Gap Analysis Report
- 2) Stakeholder Workshop on Dec. 18, 2014 to review Gap Analysis Report and to identify preliminary areas of focus
- 3) Web-based survey to validate framework and preliminary areas of focus and to obtain stakeholder feedback on areas missing from the framework
- 4) Development of a Standards Roadmap Report
- 5) Establishment of Paramedic Standards Steering Panel
- 6) Development of a Standardization Strategic Planning Report

This Standardization Strategy Report includes the following information:

- Recommendations for strategic direction for standards development for Paramedic Services in Canada
- Framework for Paramedic Standards Development which outlines key elements and subcategories
- Listing of standards, relevant regulations and guidance material and best practices
- Summary of gaps and overlaps among standards
- Recommendations for key areas of focus for standards work
- Results of a survey to validate the elements of the standards framework and key areas of focus
- Bibliography of sources and a listing of key websites for sources of information
- List of priorities.
- Important areas of work
- A communications strategy.

4. Scope of Research

CSA Group was contracted to document and analyze existing standards, policy documents and other guidance material for Paramedic Services to help identify the most appropriate areas for future standards work in terms of standardization. Based on feedback from the Project Steering Panel, a framework including a list of elements and sub-categories or “use cases” was identified to help set the scope for the research. While Paramedic Service operates in both a health science and a public safety environment, this project is not focused on clinical standards. These types of standards are under the purview of health institutions and not generally part of the voluntary consensus standards system.

Framework for Standards Literature Review

Element	Sub -Categories
1. Equipment	1.1 Land ambulances 1.2 Air Ambulances 1.3 Vehicles for emergency response and patient transfer (emergency response vehicles, buses, etc.) 1.4 Specialized vehicles (bikes, motorcycles, ATVs and boats) 1.5 Fuel Systems 1.6 Medical Supplies – biomedical equipment 1.7 Durable equipment 1.8 Disposable equipment 1.9 Personal Protective Equipment 1.10 Specialized Apparel (including CBRN and other)
2. Facilities	2.1 Response Facilities 2.2 Community Health Centres
3. Paramedic Services	3.1 Triage 3.2 Response and Care 3.3 Clinical Subspecialties(e.g. Tactical, Marine, CBRNE) 3.4 Transport 3.5 Inter-facility and Intra-facility transport 3.6 Community paramedicine 3.7 Infection Prevention and Control/Cleaning (ambulances, PPE, uniforms)
4. Personnel	4.1 Staffing /Ratios/ Shifts 4.2 Knowledge of providers 4.3 Training and Professional Development and Certification or Credentialing
5. Communications	5.1 Communications equipment and protocols 5.2 Call Taking and Dispatch 5.3 Social media

	<p>5.4 Health informatics /medical records</p> <p>5.5 Telehealth</p>
6. Program Management	<p>6.1 Quality Management Systems</p> <p>6.2 Occupational Health and Safety Management</p> <p>6.3 Policies and Procedures and Performance Indicators</p> <p>6.4 Off load delay</p> <p>6.5 Road Traffic Safety/Fleet Management</p> <p>6.6 Human Factors/Ergonomics</p> <p>6.7 Mental Health</p> <p>6.8 Logistics and Material Management</p> <p>6.9 Intra-agency operations</p> <p>6.10 Accreditation of Programs</p>
7. New Technology	<p>7.1 Medical Equipment /Devices</p> <p>7.2 NG 911 – 700 MHz</p>
8. Emergency Management	<p>8.1 Prevention – Health Promotion activities</p> <p>8.2 Emergency Management and Continuity</p> <p>8.3 Capability Based Planning</p> <p>8.4 ICS/IMS</p> <p>8.5 Disaster Response</p> <p>8.6 Mass Evacuation</p> <p>8.7 Mass Gatherings/Events</p> <p>8.8 Recovery</p>

5. Overview of Canada's Voluntary Standardization System

Standards take many forms. Regulatory standards are those promulgated by agencies that have legislative authorities. These can be at the federal, state, provincial or territorial level. Regulatory standards can invoke the need for other types of standards, such as standard reference materials and voluntary consensus standards. Standards also take other forms, including physical standards of measurement, standard operating procedures, training standards and communication/interoperability standards.

Paramedics and Paramedic Services across Canada require reliable and interoperable equipment that can be used with confidence for the protection of both workers and patients. Standardization can play a key role in helping to achieve this objective. In addition, as Paramedic Service evolves in Canada, other types of standards addressing issues such as: management systems, personnel competency, facilities and emergency and risk management have been identified as potential solutions for enhancing Paramedic Services in Canada.

In Canada, there is a coordinated, accredited standardization system for the development of voluntary, consensus – based standards and conformity assessment to those standards.

5.1 Standards Development

Standards developed within Canada's National Standards System:

- Are developed by balanced committees of all relevant interests, employing the principles of consensus.
- Have gone through a public review as well as an internal review by the standards body prior to publication.
- Are maintained and reviewed at appropriate intervals to ensure they remain current and accurate.
- Reflect the needs of affected stakeholders helping to ensure market acceptance.
- Address the national public interest by considering how the Standards advance the national economy, support sustainable development, benefit the health, safety and welfare of workers and the public, assist and protect consumers and facilitate trade.

National Standards of Canada

In Canada, only Standards Council of Canada (SCC) accredited Standards Development Organizations (SDOs) may submit Standards for approval as National Standards of Canada (NSCs).

- NSCs cannot contain administrative requirements such as conformity assessment or regulatory language.
- NSCs are published in both official languages.
- NSCs may be referenced by regulatory authorities in legislative instruments.

5.2 Types of Standards

Accredited SDOs publish different types of standards over a wide variety of subject areas to meet the needs of stakeholders. The main types of standards developed by CSA Group are outlined in the table below:

Type	Description
Principle	Expressions of intent, rule, or norm that guide or influence the development and/or application of standard requirements. <i>Example: CSA Model Code for Privacy of Personal Information</i>
Performance	Focuses on a result that must be achieved. Defines the desired performance of a product, process, or service under actual service conditions. <i>Example: Energy Efficiency of Appliances</i>
Prescriptive	States what must be done. Specifies or prescribes product or design requirements to ensure products, processes, or services meet fixed benchmarks or criteria <i>Example: Standards for Construction Materials</i>
Management System	Best practice model for the way an organization manages its business processes and activities. <i>Example: Z1000 OHS Management System, ISO 9000 Quality Mgt</i>
Competency	Sets out the knowledge and skills that individuals must have to meet requirements for tasks. <i>Example : Occupational Diving Standards</i>

5.3 Conformity Assessment

Conformity Assessment is the practice of determining whether a product, service or system meets the requirements of a particular standard. Conformity assessment serves to reassure users and provide them with confidence in the integrity of products, services or systems. Conformity assessment helps ensure that products, services and systems meet the requirements of standards for consistency, compatibility, effectiveness, and safety. Standards and conformity assessment go hand-in-hand. In Canada, the SCC accredits both standards development organizations and bodies providing conformity assessment services. This accreditation process is based on international standards and guidelines.

Third Party Product Certification

For high integrity products where safety or performance is critical, there may be a demand for third party product certification. This comprehensive conformity assessment can include: design appraisal, prototype testing, and surveillance (e.g. factory inspections). Third party certification is an assertion from an accredited certification agency, which is independent from both producer and user organizations, which the product complies with a specific set of criteria or standards.

Testing and Inspection

Testing is a means of determining specific characteristics of a product using a defined procedure and reporting outcomes. Accredited testing laboratories must meet strict criteria (e.g. qualified staff, properly calibrated equipment, and rigorous testing procedures, etc.). Inspection is a form of conformity assessment which relies on sensory evaluation and professional judgment. It can confirm that processes are followed, dimensions and specifications are met and the intent of codes or regulations is fulfilled.

Supplier's Declaration of Conformity (SDOC)

This is the most basic form of conformity assessment, where compliance is self-declared by an entity responsible for the product. (E.g. a manufacturer performs testing in house and reports the results that show compliance to standard requirements). In this type of conformity assessment there may be questions about competence, credibility or justification of the supplier to make the claims.

Personnel Certification

In almost every facet of the economy and across all types of industries, certification of workers performing critical tasks is absolutely essential. The knowledge and understanding of individual workers must be fairly assessed against uniformly applied competency criteria. Personnel Certification services from CSA Group are defined by their objectivity, professionalism and credibility across North America. Personnel certification and accreditation of training programs is also provided through a wide range of organizations and associations.

6. Elements of Standards Framework

The Section provides a summary for each of the 8 main elements of the Standards Framework and the results of the research and consultations undertaken. Recommendations for priorities areas are summarized for each element. For some of the sub-categories, the Standards Steering Panel has also identified those subjects which are important and will be monitored for potential standards work. These are identified as "watching briefs".

6.1 Equipment

The equipment area is the most well developed subject area in terms of voluntary standards, particularly in the area of personal protective equipment. Much of this work has been developed by US federal agencies such as OSHA, NIOSH and standards development organizations such as NFPA and ASTM. CSA also has a large portfolio of relevant standards in the Occupational Health and Safety PPE area and some of these do have a focus on first responders, such as Z1610 on PPE for CBRN Events. In Europe, standards have been developed and adopted for use in various countries.

Standards for equipment provide clarity on what can be a confusing world of technical specifications. However, to fully support the effective use of equipment standards, there is also a recognized need for enhanced certification and testing protocols and proper training on the use of equipment.

In the US, the InterAgency Board plays a key role in advocating and assisting in the development and implementation of performance standards, test protocols and training for all-hazards incident response equipment. In the area of equipment, the IAB maintains the Standardized Equipment List (SEL). A harmonized Canadian version, the Recommended Equipment List (REL) has been developed with a focus on CBRNE and additional relevant Canadian guidance material. EMS-related organizations have a wealth of information on equipment use and performance.

In the area of medical supplies, disposable equipment and durable equipment, the specifications and requirements for these products are largely under the purview of the health care field and constantly evolving to reflect the needs of the practitioners and advances in technology. There are few national voluntary consensus-based standards in this area. In the US there are a number of OSHA regulations for medical equipment and supplies.

In the area of vehicles, voluntary consensus standards do exist, but there are few standards reflecting Canadian practices or stakeholder needs. In the US the main activity with an EMS focus is in the area of ambulance design. A new NFPA (1917) standard was recently published.

Equipment	Results of Research and Consultations
Gaps	<ul style="list-style-type: none"> Outdated design of ambulances (e.g. ergonomic issues) Driver restraint systems (including pediatric restraint) Outdated equipment and supply lists
Overlaps	<ul style="list-style-type: none"> Standards exist in both Canada and US for a wide range of PPE. In many cases, the standards are not specific to paramedic services or the public safety sector. One area of a lack of consistency in requirements is in the area of high visibility apparel. Some jurisdictions in Canada set provincial standards for ambulances. While there is no national voluntary standard in Canada, NFPA has recently published a new edition of its Ambulance Standard which may duplicate some of the Canadian provincial requirements. In addition, a number of European countries have standards for ambulance design.
Areas of Focus	Ambulance Design Ambulance Equipment and Supplies
Survey Results	<p>Ambulance equipment and supplies ranked high by respondents (66.4% rated as very important)</p> <p>Ambulance design rated high (58.3% rated as very important. Note: While ambulance standards are important, regional needs are different and provincial requirements may create barriers – may be difficult to reach national consensus)</p> <p>Additional subjects identified for consideration : power lift cots and stretchers, uniforms, expiry dates on equipment</p>
Recommendations	<ul style="list-style-type: none"> Ambulance Equipment and Supplies should be considered as a priority area for future standards work Ambulance Design is an important area for standards work and possible harmonization with other standards and regulations. There are some potential overlaps with NFPA and BNQ which should be explored.

6.2 Facilities

At the present time, there are few voluntary consensus standards dealing with Response Facilities or Stations. In 2011, CSA published Z8000, the first national standard covering the design and construction of health care facilities. The Technical Committee responsible for this area is addressing other health care facility areas for future standards work. With the evolving nature of Paramedic Services, a variety of facilities need to accommodate the needs of Paramedic Teams, from hospital emergency departments to community care centres to team facilities. It should be noted that standards for this area would complement existing building codes, not duplicate what is already in place.

Facilities	Results of Research and Consultations
Gaps	No standards currently exist for facilities specific to Paramedic Services
Overlaps	None identified
Areas of Focus	Response Facilities (paramedic posts, headquarters) Paramedic reception/work areas at Community Health Centres
Survey Results	Not a high priority by respondents Additional categories identified: Crew rooms in hospitals, Paramedic posts, Industrial site standby /mobile treatment centres, Cleaning facilities Several comments indicated that national standards for stations would be helpful as there are huge variations across the country
Recommendations	While few facilities standards exist to meet the needs of Canadian Paramedic Services, this subject area was not identified as a priority at this time. This should be considered as a watching brief ¹ by the Paramedic Standards Steering Panel.

6.3 Paramedic Services

This subject area covers a wide range of sub-categories from dispatch to transport and care to the newer areas such as community paramedicine. One area highlighted in previous research such as the *Gap Analysis for EMS, S&T Research*, is the area of infection prevention and control. CSA has standards in this area but they are not specific to EMS. Organizations such as CHICA and PIDAC have published guidelines in this area. ASTM has a couple of standards that would apply to this element.

There is considerable interest in community paramedicine worldwide and at present no standards exist for programs or processes. NFPA initiated a proposal in this area to determine stakeholder interest in developing a standard and may be moving forward to develop a standard. However, research is still being collected from pilot programs, so it may be difficult to establish a national standard at this time. A preliminary best practice guideline could be very helpful for this rapidly growing area of service.

Paramedic Services	Results of Research and Consultations
Gaps	<ul style="list-style-type: none"> • Community Paramedicine Programs : While data is still being collected on programs, there is a need for national guidance quickly • Infection Prevention and Control (equipment, uniforms, and vehicles). This issue is growing in importance and guidance is needed to protect both workers and patients. Cleaning methods and equipment materials are not well matched

¹ watching brief is an area which is considered important and will be monitored for potential standards work in the future

	<ul style="list-style-type: none"> Triage Systems - Need a national benchmark – no standard practice across country
Overlaps	None identified at present
Areas of Focus	Infection Prevention and Control Triage Systems Community Paramedicine Programs
Survey Results	<ul style="list-style-type: none"> Additional areas for consideration: Driving standards, Urban vs. rural, Standards of practice for non traditional health care settings, Research – lack of evidence for most pre-hospital care , mass gatherings, industrial paramedicine, infant and pediatric transport, emergency response with vehicle, wilderness SAR, air medical transport Infection control standards badly overdue – 70.61% of respondents ranked this as very important Strong support for national standards for triage Community Paramedicine ranked high but some concern that data is still being developed – may be too soon to standardize
Recommendations	<ul style="list-style-type: none"> Infection Prevention and Control has been identified as a top priority for standards development work. Current guidance is inadequate and does not address new materials being used in equipment. Community Paramedicine has been identified as a top priority for standards or best practice guidance. There is a need for national guidance and potential opportunities exist which may be able to support this area of work. Triage Systems were identified as a priority area. No formal standards exist, but there are several systems in use. More research is needed to identify best practice.

6.4 Personnel

Paramedics are regulated in some form in each province in Canada. Alberta, Saskatchewan and New Brunswick have self-regulation models through provincial legislation. It was recently announced that Manitoba will also move to a self-regulation model. To eliminate barriers to mobility, the Canadian Organization of Paramedic Regulators (COPR) established a national exam at the PCP and the ACP levels. This is based on the National Occupational Competency Profile (NOCP), developed by the Paramedic Association of Canada (PAC). Paramedic training across Canada has a level of competency as all Canadian Medical Association accredited educational programs are based on the NOCP. However there are regional differences in scope of practice. The PAC is currently updating the NOCP.

A lot of work has been done in US, UK and Australia in terms of addressing the future of the Paramedic Services profession. These reference documents complement the important work taking place in Canada through the Paramedic Chiefs of Canada, the Paramedic Association of Canada and other organizations.

Personnel	Results of Research and Consultations
Gaps	<ul style="list-style-type: none"> • Worker fitness standard • Education program standards
Overlaps	Training and competency standards do exist in other jurisdictions
Areas of Focus	<p>Physical Fitness Requirements</p> <p>Educator education standards for entry to practice and/or continuing competence</p>
Survey Results	<p>67.57% of respondents ranked Educator education standards for entry to practice and/or continuing competence as very important</p> <p>The following were additional suggestions for consideration:</p> <ul style="list-style-type: none"> • Pre-employment psychological assessment like police • Driving competence • Education standards for preceptors /mentoring • Interprovincial standard licensing • More 24 hour staffing • Add Intermediate Care Paramedic • National registry • Duration of hours worked • Wellness • Supervision of new staff <p>Respondents were in strong support for ongoing physical requirements</p> <p>Education & training should be same across provinces</p> <p>Consider new research on back health & lifting mechanics</p> <p>Standards for educators should not create barriers for highly skilled teachers</p>
Recommendations	<ul style="list-style-type: none"> • Educator education standards for entry to practice and/or continuing competence has been identified as a priority area for further investigation and is aligned with work underway by PAC to update the National Competency Profile for Paramedics

6.5 Communications

The area of communications addresses equipment and protocols as well as issues such as broadband communications and new systems for health informatics and social media. Communications are critical to effective paramedic services and to the role of paramedics in any emergency. However, there are few standards for the overall coordination of communications. Issues such as chain of command, interoperability, and use of technology, planning, information sharing and common terminology have an impact on first responder communications.

In the area of health informatics, there are many international standards developed through ISO's Technical Committee 215. In addition, health informatics standards and electronic health records standards are being developed by other organizations. To help coordinate this area in the US, ANSI formed a Healthcare Informatics Standards Board. In Canada, the lead organization is Canada Health Infoway and they are responsible for a Standards Collaborative that establishes and maintains Canadian Standards. CSA is no longer involved in the development of standards for health informatics.

The impact of social media on first responders is getting a lot of attention and needs to be included in any analysis of communication strategies. While many organizations are developing policies to address this issue, there are few standards to provide guidance in this area.

Through consultations with stakeholders, the issue of call taking and dispatch was identified as a potential gap area and an opportunity to establish national best practice. Some jurisdictions are recognized as having well-developed protocols but many jurisdictions are using outdated approaches.

Communications	Results of Research and Consultations
Gaps	Call taking and dispatch Interoperable radio communications
Overlaps	None identified at present
Areas of Focus	Call taking and dispatch Interoperable radio communications AVL/GPS standards of performance
Survey Results	High ranking for call taking and dispatch (60% of respondents ranked as very important) Additional areas for consideration: <ul style="list-style-type: none">• Public and media relations & soft skills for communications• Interoperability between provinces• Portable phone images – transmission• Recording driver safety• Integration between ePCR and hospital data• Electronic medical records Other comments: <ul style="list-style-type: none">• communication interoperability (Canada wide and interagency)• standardized time reporting from caller perspective• call taking and dispatch algorithms outdated in some jurisdictions• real time updating GPS units• Toronto EMS dispatch is a “best practice”• driver performance

- don't duplicate what is in Accreditation Canada standards

Recommendations	Call taking and dispatch has been identified as a top priority for standards development work. Further research is required to collect information on current systems in place to identify best practice guidance.
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6.6 Program Management

Both ASTM and NFPA have developed voluntary consensus-based standards for Paramedic Programs. In recent years, voluntary consensus standards have moved towards more management system standards which can be incorporated into business practices for a wide range of organizations. These include Occupational Health and Safety and Road Traffic Safety Management Systems. The common structure of these standards could be tailored to any sector specific environment and provide a framework to manage program elements such as leadership, training, planning and continuous improvement. For example, a high number of vehicle-related incidents and injuries point to the need for potential standards work in the area of road and fleet safety.

While not developed through an accredited standards development process, Accreditation Canada's Qmentum Program for Emergency Medical Services is a good example of high level program standards. A national quality management system standard for paramedic services may be an option to consider advancing best practices in this field.

In the area of occupational health and safety, there is increasing emphasis on new workplace issues such as: mental health, human factors and occupational health and safety management systems. CSA has developed a wide range of standards in these subject areas. While there are no standards specific to paramedic services, the generic standards could be tailored to the address sector-specific needs. The issue of critical incident stress and psychological health and safety are being addressed in the first responder community and standards could be helpful in this important area of worker health and safety.

In the area of Program Standards, there are a significant number of best practice guidance documents that could be seed documents for national standards.

Program Management	Results of Research and Consultations
Gaps	Quality Management System for Paramedic Organizations/Programs
Overlaps	Potential overlaps with Accreditation Canada standards and US standards on Program Management
Areas of Focus	Quality Management Systems for Paramedic Programs Paramedic Mental Health
Results of Survey	Highest ranking for Paramedic Mental Health programs. 77.8% of respondents ranked as very important and it was noted that this issue is critical for sustaining long term careers in field

	<p>Strong interest in standards for consistent quality in programs</p> <p>Other areas suggested for consideration :</p> <ul style="list-style-type: none"> • Disaster management • Mental health assistance (long term, access) • Critical incident stress management • Evidence-based research • Performance indicators for field supervision • Compliance testing for programs – need national data on program metrics
Recommendations	Paramedic Mental Health has been identified as a top priority for future standards development work. While research is currently underway, standards, guidance and tools are available which could be tailored to meet the needs of the Paramedic Community.

6.7 New Technology

Recent developments have taken place in the area of 700 MHz Broadband for Public Safety through government agencies such as Industry Canada and the Federal Communications Commission in the US. In the US, NENA has developed a wide range of telecommunications standards with many of these dealing with 911 protocols and public safety access communications (PSAP). This subject area also covers new technology in the area of medical devices and practices. At present, no standards references were identified for these areas of new technology

New Technology	Results of Research and Consultations
Gaps	None identified
Overlaps	Other agencies are working on issues such as NG 911 and 700 MHZ
Key areas of focus	NG 911 and 700 MHz identified but not high priority as already being addressed in other forums
Results of Survey	<p>Additional topics for consideration:</p> <ul style="list-style-type: none"> • Power stretchers • Pharmacology • Integration of technology with care • Dispatch mapping info needs to be transferred to ambulance • New treatments • Tablets and acr use • Feedback tools for CPR • Community engagement through social media • Patient care reports – mobile data management
Recommendations	New and emerging technology should be considered as a watching brief

6.8 Emergency Management

Paramedic Services play a key role in the management of emergencies and business continuity. National Standards such as CSA 1600 on Emergency Management and Continuity Programs exist and standards are also available in the US and Internationally. Multi- agency coordination, mass evacuation and mass casualty management are new areas being developed in the standards community. There is also little national guidance on the issues associated with mass gatherings.

The area of Pandemic Planning has been identified for standards development work and this also relates to infection prevention and control and decontamination standards work.

Emergency Management	Results of Research and Consultations
Gaps	<ul style="list-style-type: none">• Emergency and Business Continuity Program for Paramedic Services• Mass casualty management• Mass decontamination• Pandemic planning• No national guidance on how to deal with mass gatherings such as major sporting events, festivals, etc. There are after action reports for some of these events which could be used to develop guidance materials• While standards, systems and training programs exist in the area of ICS /IMS, it was identified that variations exist across the country and there is no national entity responsible for managing and maintaining these programs
Overlaps	Both CSA and NFPA have standards covering emergency management and business continuity. They are technically aligned and the Canadian standard was based on the NFPA Standard.
Areas of Focus	Mass Evacuation IMS
Survey Results	<p>Comments:</p> <ul style="list-style-type: none">• minimum ICS 200 should be standard• more training needed on disasters, scene management• all medics need basic training in ICS, CBRN, mass casualty, major incident response• paramedics do not do well working as part of larger team with hierarchical structure• rural /urban differences need to be considered <p>Other areas suggested for consideration:</p> <ul style="list-style-type: none">• Hazmat & fire scene rehab• Integration of volunteer organizations into disaster planning• Unified command principles• Off-road rescue – SAR• Inter-operability with other agencies• Working with humanitarian aid agencies (mgt of large number of bodies)

Recommendations	This should be considered as a watching brief, at this time. While this element is important to Paramedic Services, work is ongoing in other forums which could be tailored for use by Paramedic Services.
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7. Summary of Top Priorities

Through the course of this project, based on the research and consultations, the following were identified by the Paramedic Standards Steering Panel as the top 5 priority areas for standards work:

1. Infection Prevention and Control
2. Paramedic Mental Health
3. Call taking and dispatch
4. Ambulance equipment and supplies
5. Community Paramedic Programs

Additional Important Areas for Standards Work

The Paramedic Standards Steering Panel has identified two additional areas as being important for future standards work:

- Triage Systems
- Educator Education Standards

8. Conclusions and Recommendations

The development of national standards solutions is a shared responsibility, and requires close partnership between all stakeholders, including users, government agencies, the private sector, standards and testing bodies, researchers and other relevant organizations to ensure that the standards reflect the needs of the Canadian stakeholders. This Standardization Strategy Report and the work of this overall project reflect this shared responsibility. Going forward, to ensure continued progress, this Standardization Strategy Report and the Standards Roadmap should be reviewed and updated periodically in collaboration with partners, members of the Paramedic Community and other stakeholders.

Path Forward on Standards for Canadian Paramedic Services: Strategic Recommendations

- 1) The CSA Group Paramedic Standards Steering Panel established as part of this project should continue to provide leadership and strategic oversight for the development and implementation of priority standards solutions. This Panel will champion and promote Canadian standards activities and maintain the Roadmap created through this project. This will also include direction on activities to communicate the results of this project.
- 2) The Paramedic Standards Steering Panel has identified the following as the top 5 priority areas for standards work:
 - Infection Prevention and Control
 - Paramedic Mental Health
 - Call taking and dispatch
 - Ambulance equipment and supplies
 - Community Paramedic Programs
- 3) The Paramedic Standards Steering Panel has identified 2 additional areas as being important for future standards work:
 - Triage Systems
 - Educator Education Standards
- 4) It is critical that the implementation of the Standards Roadmap be aligned with other work being undertaken by the Paramedic Community of Practice, the Paramedic Chiefs of Canada and the Paramedic Association of Canada. To achieve the goals of the Roadmap, it will also be imperative to develop liaisons with relevant public safety and first responder organizations, standards setting organizations, and stakeholder groups.
- 5) For any new standards projects identified by the Paramedic Standards Steering Panel, CSA Group should take appropriate steps to file notices of intent with the Standards Council of Canada.

9. Transition /Communications Plan

This project was intended to provide a key building block in the future direction for Paramedic Services in Canada and complements other projects and initiatives being undertaken by the Paramedic Community of Practice, the Paramedic Chiefs of Canada and the Paramedic Association of Canada. National standards can provide a sustainable solution, complement existing standards and can be used by regulatory authorities, the Paramedic community, training organizations, and industry. Standards can also contribute to the development of additional research and technologies.

Throughout the execution of this project, a number of communication and outreach activities were undertaken to raise awareness of this project. These included:

- Presentation to Working Group of National Occupational Competency Profile – Dec. 18, 2013
- Presentation to the Paramedic Chiefs of Canada Webcast – Jan. 22, 2014
- Online survey to members of Canadian Paramedic Community in January 2014

While the primary transition from this project report to next steps will be the ongoing work of the Paramedic Standards Steering Panel to implement the recommendations, there is also a need to communicate the results of the project to other stakeholders. The following communications strategy will be executed to raise awareness with interested stakeholders and encourage ongoing participation in the next steps.

Primary Audiences

The primary audiences will be the Paramedic Community of Canada and the National Standards System.

Secondary Audiences

It will be important to share the results of this project with a broad range of stakeholders, including:

- Other First Responder Communities of Practice (Fire, Police and Emergency Management)
- Industry (suppliers , manufacturers)
- Research and Academic Institutions
- CSA Group Communities of Practice
- Related organizations (e.g. Accreditation Canada)

Objectives

- To provide interested stakeholders with easy access to the Standardization Strategy Report
- To provide a contact point for questions and follow-up activities
- To raise awareness of the value and importance of standards to support Paramedic Services and the strategic direction for standards development in Canada for this area of work
- To encourage stakeholder support for the development of standards in priority areas, including volunteer participants for standards projects and financial support for standards development work
- Assess level of interest in project results

Key Messages

- Priority areas for potential standards development
- Establishment of a Paramedic Standards Steering Panel to provide ongoing leadership and oversight for national standards work
- Linkages between this project and other related strategic initiatives to show coordination and collaboration

Recommended Actions

1. Prepare fact sheet and summary of project and key results
2. Post Standardization Strategy Report on the websites of partner organizations: PCC, PAC, CSSP, and CSA Communities of Interest

3. Provide link to Standardization Strategy Report and fact sheet to those users who responded to the online survey
4. Post link to the Standardization Strategy Report on related websites – e.g., Public Safety Partners Resource Centre (<http://psprc-crpsp.ca/EN/Pages/Projects.aspx>), University of Regina Centre for Public Safety and First Responders
5. Engagement of stakeholders & members of the committee, using CSA Group's online collaboration platform (<https://community.csagroup.org>) and appropriate social media channels
6. Awareness building via CSSP Communities of Practice
7. Presentations at Conferences and Workshops to promote awareness of the results of the project

Annex A – References for Each Element in the Framework

Equipment

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
Canada	Ambulances – Vehicle Specifications – Certification Protocol	1013-900 BNQ	Standard
Canada	CAN/CGSB – 155.1 – 2001, Firefighters' Protective Clothing for Protection Against Heat and Flame	CAN/CGSB – 155.1 – 2001	Standard
Canada	CAN/CGSB – 4.2 No. 26.3 – 2010 /ISO 811:1981 , Textile Test Methods - Textile Fabrics – Determination of Resistance to Water Penetration – Hydrostatic Pressure Test	CAN/CGSB – 4.2 No. 26.3 – 2010 /ISO 811:1981	Standard
Canada	CAN/CGSB – 4.2 No. 2-M88 (R2001), Textile Test Methods – Conditioning Textile Materials for Testing	CAN/CGSB – 4.2 No. 2-M88 (R2001)	Standard
Canada	CAN/CGSB 4.162 M80 Hospital Textiles — Flammability Performance Requirements	CAN/CGSB 4.162 M80	Standard
Canada	CAN/CGSB/CSA Z1610-11, Protection of first responders from chemical, biological, radiological and nuclear (CBRN) events.	CAN/CGSB/CSA Z1610-11,	Standard
Canada	CAN/CGSB-155.20-2000 Workwear for Protection Against Hydrocarbon Flash Fire	CAN/CGSB-155.20-2000	Standard
Canada	CAN/CGSB-155.21-2000 Recommended Practices for the Provision and Use of Workwear for Protection Against Hydrocarbon Flash Fire	CAN/CGSB-155.21-2000	Standard
Canada	CAN/CGSB-155.22-97 Fireline Workwear for Forest Firefighters	CAN/CGSB-155.22-97	Standard
Canada	CAN/CGSB-155.23-97 Recommended Practices for the Provision and Use of Fireline Workwear for Forest Firefighters	CAN/CGSB-155.23-97	Standard

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
Canada	CAN/CSA – Z611- 02 (R2007) Riot Helmets and Faceshield Protection	CAN/CSA – Z611-02 (R2007)	Standard
Canada	CAN/CSA Z180.1, Compressed Breathing air and systems	CAN/CSA Z180.1	Standard
Canada	CAN/CSA Z617-06(R2011), Personal Protective Equipment (PPE) for Blunt Trauma	CAN/CSA Z617-06(R2011)	Standard
Canada	CAN/CSA Z94.4 -11, Selection, use, and care of respirators	CAN/CSA Z94.4 -11	Standard
Canada	CSA 96 – 09, High Visibility Apparel	CSA 96 – 09	Standard
Canada	Z 94.1 – Industrial head protection	Z 94.1	Standard
Canada	Z94.3 – 07, Eye and face protectors	Z94.3-07	Standard
Australia	AS/NZS 4535 Ambulance Restraint Standard	AN/NZS 4535	Standard
Europe	BS EN 13718-1:2008 Medical vehicles and their equipment. Air ambulances Requirements for medical devices used in air ambulances	BS EN 13718-1:2008	Standard
Europe	BS EN 13718-2:2008 Medical vehicles and their equipment. Air ambulances Operational and technical requirements of air ambulances	BS EN 13718-2:2008	Standard
Europe	BS EN 14458:2004 Personal eye-equipment. Faceshields and visors for use with firefighters and high performance industrial safety helmets used by firefighters, ambulance and emergency services	BS EN 14458:2004	Standard
Europe	BS EN 1789:2007+A1:2010 Medical vehicles and their equipment. Road ambulances	BS EN 1789:2007+A1:2010	Standard
Europe	BS EN 1846-1:2011 Firefighting and rescue service vehicles - Nomenclature and designation	BS EN 1846-1:2011	Standard
Europe	BS EN 1865:2000 Specifications for stretchers and other patient handling equipment used in road	BS EN 1865:2000	Standard

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
	ambulances		
Europe	BS EN 1865-1:2010 Patient handling equipment used in road ambulances - General stretcher systems and patient handling equipment	BS EN 1865-1:2010	Standard
Europe	BS EN 1865-2:2010 Patient handling equipment used in road ambulances - Power assisted stretcher	BS EN 1865-2:2010	Standard
Europe	BS EN 1865-3:2012 Patient handling equipment used in road ambulances - Heavy duty stretcher	BS EN 1865-3:2012	Standard
Europe	BS EN 1865-4:2012 Patient handling equipment used in road ambulances - Foldable patient transfer chair	BS EN 1865-4:2012	Standard
Europe	BS EN 1865-5:2012 Patient handling equipment used in road ambulances - Stretcher support	BS EN 1865-5:2012	Standard
Europe	CEN 1789:2007 Medical vehicles and their equipment: Road ambulances.	CEN 1789:2007	Standard
Europe	DIN 13073 Rescue systems - Dimensions for maintain systems for fastening of undercarriage and stretcher in ambulances	DIN 13073	Standard
Europe	DIN 13154 Single use rescue breathing device for lay persons - Requirements and testing	DIN 13154	Standard
Europe	DIN 13156 Single patient first aid kit for mass casualties and catastrophes	DIN 13156	Standard
Europe	DIN 13230-6 Aircrafts for the patient transport - Part 6: Patient transport with passenger aircrafts	DIN 13230-6	Standard
Europe	DIN 58279 Medical instruments - First aid box scissors	DIN 58279	Standard
Europe	DIN 75076 Rescue Systems - Intensive care vehicle - Definitions, requirements, testing	DIN 75076	Standard
Europe	DIN 75079:2009-11 Physician response cars	DIN 75079:2009-	Standard

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
		11	
Europe	DIN EN 12182 Assistive products for persons with disability - General requirements and test methods; German version EN 12182:2012	DIN EN 12182	Standard
Europe	DIN EN 14458 Personal eye-equipment - Faceshields and visors for use with firefighters' and high performance industrial safety helmets used by firefighters, ambulance and emergency services	DIN EN 14458	Standard
Europe	DIN EN ISO 7376 Anesthetic and respiratory equipment - Laryngoscopes for tracheal intubation (ISO 7376:2009); German version EN ISO 7376:2009	DIN EN ISO 7376	Standard
Europe	Medical vehicles and their equipment - Air ambulances - Part 1: Requirements for medical devices used in air ambulances	DS DS/EN 13718-1	Standard
Europe	Medical vehicles and their equipment - Air ambulances - Part 2: Operational and technical requirements of air ambulances	DS DS/EN 13718-2	Standard
Europe	Personal eye-equipment - Faceshields and visors for use with firefighters', and high performance industrial safety helmets used by firefighters, ambulance and emergency services	DS DS/EN 14458	Standard
Europe	Medical vehicles and their equipment – Road ambulances	DS DS/EN 1789 + A1	Standard
Europe	Patient handling equipment used in road ambulances - Part 1: Specification for general stretcher systems and patient handling equipment	DS DS/EN 1865-1	Standard
Europe	Patient handling equipment used in road ambulances - Part 2: Power assisted stretcher	DS DS/EN 1865-2	Standard
Europe	Patient handling equipment used in road ambulances - Part 3: Heavy duty stretcher	DS DS/EN 1865-3	Standard

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
Europe	Patient handling equipment used in road ambulances - Part 4: Foldable patient transfer chair	DS DS/EN 1865-4	Standard
Europe	Patient handling equipment used in road ambulances - Part 5: Stretcher support	DS DS/EN 1865-5	Standard
Europe	EN 1041:2008+A1:2013 Information supplied by the manufacturer of medical devices	EN 1041:2008+A1:2013	Standard
Europe	SS-EN 14458:2004 Personal eye-equipment - Faceshields and visors for use with firefighters' and high performance industrial safety helmets used by firefighters, ambulance and emergency services	SS-EN 14458:2004	Standard
India	Automotive Industry Standard - A15-125F Correctional and Functional Requirements for Road Ambulances	A15-125/F	Standard
International	ISO 10079-1:2009 Medical suction equipment - Electrically powered suction equipment. Safety requirements (ISO 10079-1:1999)	ISO 10079-1:2009	Standard
International	ISO 10651-5:2006 Lung ventilators for medical use. Particular requirements for basic safety and essential performance - Gas-powered emergency resuscitators	ISO 10651-5:2006	Standard
Japan	JIST 7205 Manual (Operator Powered) Resuscitators	JIST 7205	Standard
Japan	JIST 7206 Gas Powered Resuscitators	JIST 7206	Standard
NATO	NATO Military Standards. FAEP-38 and AC/225.	FAEP-38 and AC/225	Standard
United States	ANSI/Compressed Gases Association – Specification G-7.1, Commodity Specification for Air, Edition 5	ANSI G-7.1	Standard
United States	ANSI Z89.1, Industrial Head Protection, 2009 Edition	ANSI Z89.1	Standard
United States	ANSI Z89.1, Industrial Head Protection, 2009 Edition (IAB adopted)	ANSI Z89.1	Standard

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	ANSI/ISEA 107, High Visibility Safety Apparel, 2010 edition (IAB Adopted)	ANSI/ISEA 107	Standard
United States	High Visibility Safety Apparel	ANSI/ISEA 107	Standard
United States	ANSI/ISEA 207, High Visibility Public Safety Vests, 2006 Edition	ANSI/ISEA 207	Standard
United States	High Visibility Public Safety Vests	ANSI/ISEA 207	Standard
United States	ANSI/ISEA Z87.1-2010, American National Standard for Occupational and Educational Eye and Face Protection Devices	ANSI/ISEA Z87.1-2010	Standard
United States	Standard Practice for Design, Construction, and Procurement of Emergency Medical Services Systems (EMSS) Ambulances	ASTM F2020	Standard
United States	CGA E-4, 6th Edition, Standard for Gas Pressure Regulators, Compressed Gas Association, 2010	CGA E-4, 6th Edition	Standard
United States	CGA E-7, 3rd Edition, Standard for Medical Gas Regulators and Flowmeters, Compressed Gas Association, 2006	CGA E-7, 3rd Edition	Standard
United States	CGA G-4.1, 6th Edition, Cleaning Equipment for Oxygen Service, Compressed Gas Association, 2009	CGA G-4.1, 6th Edition,	Standard
United States	NFPA 1852: Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus, 2013 Edition	NFPA 1852	Standard
United States	Standard for automotive ambulances	NFPA 1917	Standard
United States	NFPA 1981: Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, 2013 Edition	NFPA 1981	Standard
United States	NFPA 1982: Standard on Personal Alert Safety Systems (PASS), 2013 Edition	NFPA 1982	Standard

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	NFPA 1994 : Standard on Protective Ensembles for First Responders to CBRN Terrorism Incidents, 2007 Edition (IAB Adopted)	NFPA 1994	Standard
United States	NFPA 1999: Standard on Protective Clothing for Emergency Medical Operations, 2013 Edition	NFPA 1999	Standard
United States	Standard on protective clothing for emergency medical operations	NFPA 1999	Standard
United States	NFPA 2112: Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire	NFPA 2112	Standard
United States	NFPA 2113: Standard on Selection, Care, Use and Maintenance of Flame Resistant Garments for Protection of Industrial Personnel Against Flash Fire	NFPA 2113	Standard
United States	Ambulance Equipment Mounting Standards	SAE 2917, 2956	Standard
United States	Series of NIOSH Respiratory Protection standards		Regulation
United States	Equipment, Administrative	09ME-01-ADMN	Regulation
United States	Bag/Kit/Pack, Medical	09ME-01-BAGM	Regulation
United States	Cots	09ME-01-COTS	Regulation
United States	Equipment/Kits, Multi-Casualty Incidents	09ME-01-MCIK	Regulation
United States	Tools, Pediatric Patient Assessment and Management	09ME-01-PEDT	Regulation
United States	Shelter, Medical	09ME-01-SHEL	Regulation
United States	Equipment, Airway Management	09ME-02-AWMG	Regulation
United States	Monitor, End Tidal, CO2, Quantitative/Qualitative	09ME-02-ETCO	Regulation
United States	Equipment, Oxygen	09ME-02-OXYE	Regulation
United States	Equipment, Suction Units	09ME-02-SUCT	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	Ventilators	09ME-02-VENT	Regulation
United States	Monitor, Blood Chemistry, Non-invasive	09ME-03-BCNI	Regulation
United States	Equipment, Blood Pressure	09ME-03-BPSL	Regulation
United States	Defibrillator, Automated External	09ME-03-DEAE	Regulation
United States	Defibrillator/Cardiac Monitors/Pacing	09ME-03-DEMP	Regulation
United States	Meters, Glucose	09ME-03-GLUM	Regulation
United States	Otoscope/Ophthalmoscope	09ME-03-OTOP	Regulation
United States	Oximeter, Pulse	09ME-03-POXI	Regulation
United States	Stethoscope	09ME-03-STET	Regulation
United States	Thermometer	09ME-03-THER	Regulation
United States	Equipment, Spinal Immobilization	09ME-04-SPIN	Regulation
United States	Splints, Durable	09ME-04-SPLT	Regulation
United States	Gurneys	09ME-05-GURN	Regulation
United States	Litters/Stretchers	09ME-05-LITR	Regulation
United States	Pump, Intravenous	09ME-06-PUMP	Regulation
United States	Equipment, Patient Isolation	09ME-07-ISOL	Regulation
United States	Equipment, Pharmaceutical Counting	09ME-07-PCNT	Regulation
United States	Equipment, Pharmaceutical Labeling	09ME-07-PLBL	Regulation
United States	Equipment, Translation/Accessibility	09ME-07-TRAN	Regulation
United States	Supplies, Administrative	09MS-01-ADMN	Regulation
United States	Pads, Alcohol Prep	09MS-01-ALPP	Regulation
United States	Bag, Body, Heavy-Duty	09MS-01-BAGB	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	Kit, Debridement, and Supplies	09MS-01-KDEB	Regulation
United States	Linens	09MS-01-LNEN	Regulation
United States	Supplies, Medical Administration	09MS-01-MEDS	Regulation
United States	Needles, Assorted	09MS-01-NEAG	Regulation
United States	Solutions and Applicators, Providone Iodine	09MS-01-POVO	Regulation
United States	Screen, Privacy	09MS-01-SCRN	Regulation
United States	Shears/Scissors, Medical	09MS-01-SHER	Regulation
United States	Shield, Eye Irrigation Lens	09MS-01-SHEY	Regulation
United States	Suture, Various Sizes	09MS-01-SUTR	Regulation
United States	Supplies and Material, Suture	09MS-01-SUTS	Regulation
United States	Depressor, Tongue	09MS-01-TNDP	Regulation
United States	Tags and Supplies, Triage	09MS-01-TTAG	Regulation
United States	Supplies, Airway Management	09MS-02-AWMG	Regulation
United States	Block, Bite	09MS-02-BITE	Regulation
United States	Tubes, Nasogastric	09MS-02-NATU	Regulation
United States	Nebulizer	09MS-02-NEBU	Regulation
United States	Supplies, Oxygen Administration	09MS-02-OXYA	Regulation
United States	Supplies and Adjuncts, Suction	09MS-02-SUCT	Regulation
United States	Kit, Thoracostomy and Supplies	09MS-02-THOR	Regulation
United States	Bag, Biohazard	09MS-03-BAGH	Regulation
United States	Supplies, Biohazard Disposal	09MS-03-BIOD	Regulation
United States	Supplies, Disinfectant and Antiseptic	09MS-03-DSIN	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	Gloves, Biomedical, Non-Sterile	09MS-03-GLVN	Regulation
United States	Gloves, Biomedical, Sterile	09MS-03-GLVS	Regulation
United States	Supplies, Personal Hygiene	09MS-03-HYGP	Regulation
United States	Supplies, Body Substance Isolation	09MS-03-ISOS	Regulation
United States	Bandages and Dressings	09MS-04-BAND	Regulation
United States	Bandages and Products, Hemostatic	09MS-04-HSBN	Regulation
United States	Tape, Adhesive	09MS-04-TAPE	Regulation
United States	Tourniquet	09MS-04-TNQT	Regulation
United States	Supplies, Intravenous Administration	09MS-05-IVSA	Regulation
United States	Needles, Intraosseous Infusion	09MS-05-NEIO	Regulation
United States	Cartridge Injector, Syringe	09MS-05-SYRC	Regulation
United States	Syringe	09MS-05-SYRG	Regulation
United States	Electrodes/Probes, Monitoring	09MS-06-PROB	Regulation
United States	Supplies/Systems, Patient Restraint	09MS-07-REST	Regulation
United States	Supplies, Spinal Immobilization	09MS-08-SPIN	Regulation
United States	Splints. Disposable	09MS-08-SPLT	Regulation
United States	Kit, Obstetrical	09MS-09-KTOB	Regulation
United States	Pharmaceuticals (Multiple Standards)	09PH	Regulation
United States	Vehicle, Specialized Emergency Management	12VE-00-SPEC	Regulation
United States	Glucose Test System	21 CFR 862.1345	Regulation
United States	Stethoscope Head	21 CFR 868.1930	Regulation
United States	Nebulizer	21 CFR 868.5630	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	Continuous Ventilator	21 CFR 868.5895	Regulation
United States	21 CFR 868.5895 (FDA), Continuous Ventilator	21 CFR 868.5895 (FDA)	Regulation
United States	21 CFR 868.5895 (FDA), Continuous Ventilator	21 CFR 868.5895 (FDA)	Regulation
United States	Manual Emergency Ventilator	21 CFR 868.5915	Regulation
United States	Arrhythmia Detector and Alarm	21 CFR 870.1025	Regulation
United States	21 CFR 870.1025 (FDA), Arrhythmia Detector and Alarm (including ST-segment measurement and alarm)	21 CFR 870.1025 (FDA)	Regulation
United States	Blood Pressure Cuff	21 CFR 870.1120	Regulation
United States	Oximeter	21 CFR 870.2700	Regulation
United States	Medical Magnetic Tape Recorder	21 CFR 870.2800	Regulation
United States	DC-defibrillator (including paddles)	21 CFR 870.5300	Regulation
United States	21 CFR 870.5300 (FDA), DC-defibrillator (including paddles)	21 CFR 870.5300 (FDA)	Regulation
United States	Cartridge Syringe	21 CFR 872.6770	Regulation
United States	Otoscope	21 CFR 874.4770	Regulation
United States	Endoscope and Accessories	21 CFR 876.1500	Regulation
United States	Gastrointestinal Tube and Accessories	21 CFR 876.5980	Regulation
United States	Inflatable Extremity Splint	21 CFR 878.3900	Regulation
United States	21 CFR 878.3900 (FDA), Inflatable extremity splint	21 CFR 878.3900 (FDA)	Regulation
United States	Noninflatable Extremity Splint	21 CFR 878.3910	Regulation
United States	21 CFR 878.3910 (FDA), Noninflatable Extremity	21 CFR 878.3910	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
	Splint	(FDA)	
United States	Surgical Apparel	21 CFR 878.4040	Regulation
United States	21 CFR 878.4040 (FDA), Surgical apparel	21 CFR 878.4040 (FDA)	Regulation
United States	Surgeon's Glove	21 CFR 878.4460	Regulation
United States	Absorbable Hemostatic Agent and Dressing	21 CFR 878.4490	Regulation
United States	Powered Suction Pump	21 CFR 878.4780	Regulation
United States	21 CFR 878.4780 (FDA), Powered suction pump	21 CFR 878.4780 (FDA)	Regulation
United States	Manual Surgical Instrument for General Use	21 CFR 878.4800	Regulation
United States	21 CFR 878.4800 (FDA), Manual surgical instrument for general use	21 CFR 878.4800 (FDA)	Regulation
United States	21 CFR 878.4800 (FDA), Manual surgical instrument for general use	21 CFR 878.4800 (FDA)	Regulation
United States	Clinical Color Change Thermometer	21 CFR 880.2900	Regulation
United States	Clinical Electronic Thermometer	21 CFR 880.2910	Regulation
United States	Clinical Mercury Thermometer	21 CFR 880.2920	Regulation
United States	I.V. Container	21 CFR 880.5025	Regulation
United States	Intravascular Catheter	21 CFR 880.5200	Regulation
United States	Medical Adhesive Tape and Adhesive Bandage	21 CFR 880.5240	Regulation
United States	Pressure Infusor for an I.V. Bag	21 CFR 880.5420	Regulation
United States	21 CFR 880.5420 (FDA), Pressure infusor for an I.V. bag	21 CFR 880.5420 (FDA)	Regulation
United States	Intravascular Administration Set	21 CFR 880.5440	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	Infusion Pump	21 CFR 880.5725	Regulation
United States	21 CFR 880.5725 (FDA), Infusion pump	21 CFR 880.5725 (FDA)	Regulation
United States	Piston Syringe	21 CFR 880.5860	Regulation
United States	21 CFR 880.5860 (FDA), Piston syringe	21 CFR 880.5860 (FDA)	Regulation
United States	Tongue Depressor	21 CFR 880.6230	Regulation
United States	21 CFR 880.6230 (FDA), Tongue Depressor	21 CFR 880.6230 (FDA)	Regulation
United States	Patient Examination Glove	21 CFR 880.6250	Regulation
United States	21 CFR 880.6250 (FDA), Patient examination glove	21 CFR 880.6250 (FDA)	Regulation
United States	Vacuum-powered Body Fluid Suction Apparatus	21 CFR 880.6740	Regulation
United States	Protective Restraint	21 CFR 880.6760	Regulation
United States	21 CFR 880.6760 (FDA), Protective restraint	21 CFR 880.6760 (FDA)	Regulation
United States	Medical Disposable Scissors	21 CFR 880.6820	Regulation
United States	Hand-carried Stretcher	21 CFR 880.6900	Regulation
United States	21 CFR 880.6900 (FDA), Hand-carried stretcher	21 CFR 880.6900 (FDA)	Regulation
United States	Wheeled Stretcher	21 CFR 880.6910	Regulation
United States	21 CFR 880.6910 (FDA), Wheeled stretcher	21 CFR 880.6910 (FDA)	Regulation
United States	Ophthalmoscope	21 CFR 886.1570	Regulation
United States	Ocular Surgery Irrigation Device	21 CFR 886.4360	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	Performance Standard for Electrode Lead Wires and Patient Cables	21 CFR 898	Regulation
United States	21 CFR 898 (FDA), Performance Standard for Electrode Lead Wires and Patient Cables	21 CFR 898 (FDA)	Regulation
United States	29 CFR 1910.132 (OSHA), General Requirements, PPE	29 CFR 1910.132 (OSHA)	Regulation
United States	29 CFR 1910.133 (OSHA), Eye and face protection	29 CFR 1910.133 (OSHA)	Regulation
United States	29 CFR 1910.134 (OSHA), Respiratory Protection	29 CFR 1910.134 (OSHA)	Regulation
United States	29 CFR 1910.134 (OSHA), Respiratory Protection	29 CFR 1910.134 (OSHA)	Regulation
United States	29 CFR 1910.138 (OSHA), Hand Protection	29 CFR 1910.138 (OSHA)	Regulation
United States	Hazardous Waste Operations and Emergency Response	29 CFR 1910.120	Regulation
United States	General Requirements, PPE	29 CFR 1910.132	Regulation
United States	Eye and Face Protection	29 CFR 1910.133	Regulation
United States	29 CFR 1910.133(OSHA), Eye and Face Protection	29 CFR 1910.133(OSHA)	Regulation
United States	Respiratory Protection	29 CFR 1910.134	Regulation
United States	29 CFR 1910.134(OSHA) , Respiratory Protection	29 CFR 1910.134(OSHA)	Regulation
United States	Head Protection	29 CFR 1910.135	Regulation
United States	29 CFR 1910.135(OSHA) Head Protection	29 CFR 1910.135(OSHA)	Regulation
United States	Hand Protection	29 CFR 1910.138	Regulation

Element 1 : Equipment			
Jurisdiction	Title	Reference	Ref Type
United States	42 CFR 84 – NIOSH Respiratory Protective Devices	42 CFR 84	Regulation
United States	42 CFR 84 (NIOSH), Respiratory Protective Devices	42 CFR 84 (NIOSH)	Regulation
United States	42 CFR 84 (NIOSH), with APR CBRN Statement of Standard Revision 2, April 4, 2003	42 CFR 84 (NIOSH)	Regulation
United States	42 CFR 84 (NIOSH), with Powered Air-Purifying Respirator (PAPR) CBRN Statement of Standard, October 6, 2006	42 CFR 84 (NIOSH)	Regulation
United States	42 CFR 84 (NIOSH), with Self-Contained Breathing Apparatus (SCBA) CBRN Statement of Standard (Requires NFPA 1981-2007 Certification)	42 CFR 84 (NIOSH)	Regulation
United States	NIOSH Publication No. 2008-132, Guidance on Emergency Responder Personal Protective Equipment (PPE) for Response to CBRN Terrorism Incidents	NIOSH 2008-132	Regulation
United States	Bag, Intravenous Pressure Infusion	O9MS-05-IVBG	Regulation
United States	Rotorwing Standards	CAMTS – 9TH Edition-5	Best Practice
United States	Fixed Wing Standards	CAMTS – 9TH Edition-6	Best Practice
United States	National Strategy on CBRNE Standards	National Science and Technology Council, Committee on Homeland and National Security, Subcommittee on Standards, May 2011	Best Practice

Facilities

Element 2: Facilities			
Jurisdiction	Title	Reference	Ref Type
Canada	Z 317.2 – 10, Special requirements for heating, ventilation and air-conditioning (HVAC) systems in health care facilities	Z 317.2 – 10	Standard
Canada	Z 8000 – 11, Canadian health care facilities	Z 8000 – 11	Standard
International	ISO 15190:2003 Medical laboratories. Requirements for safety	ISO 15190:2003	Standard
United States	Guidelines for Design and Construction of Hospital and Health Care Facilities, 2001 (American Institute of Architects and the Facilities Guidelines Institute) SEL recommended		Best Practice
United States	Guidelines for Environmental Infection Control in Health Care Facilities (CDC and the Healthcare Infection Control Practices Advisory Committee)		Best Practice
United States	Guidelines for Design and Construction of Hospital and Health Care Facilities, 2001 (American Institute of Architects and the Facilities Guidelines Institute) SEL recommended		Best Practice
United States	Guidelines for Environmental Infection Control in Health Care Facilities , 2003(CDC and the Healthcare Infection Control Practices Advisory Committee		Best Practice

Paramedic Services

Element 3: Paramedic Services			
Jurisdiction	Title	Reference	Ref Type
Canada	CSA Z314.3 - Effective Sterilization in Healthcare Facilities	CSA Z314.3	Standard
Canada	CSA 314.8 - Decontamination of Reusable Medical Devices	CSA Z314.8	Standard

Element 3: Paramedic Services			
Canada	CHICA Position Statement - Recommendations for Environmental Disinfection of Emergency Vehicles		Standard
Canada	Infection Prevention and Control Best Practices Manual for Land Ambulance Paramedics	Emergency Health Services Branch, MOHLTC, 2007	Best Practice
Canada	CSA PLUS 1112 - Infection Prevention and Control in Office -Based Health Care and Allied Services	Plus 1112	Best Practice
Canada	Best Practices for Environmental Cleaning for Prevention and Control of Infections	Provincial Infectious Diseases Advisory Committee, 2012	Best Practice
Canada	Infection Control Manual	Toronto EMS , 2010	Best Practice
Europe	BS EN 13976-1:2011 Rescue systems. Transportation of incubators - Interface conditions	BS EN 13976-1:2011	Standard
Europe	BS EN 13976-2:2011 Rescue systems. Transportation of incubators - System requirements	BS EN 13976-2:2011	Standard
Europe	Prevention and Control of health-care-associated infections in primary and community	NICE Clinical Guidelines 139, 2012	Best Practice
United States	Standard Practice for Emergency Medical Dispatch Management	ASTM 1560	Standard
United States	Standard Practice for Emergency Medical Dispatch	ASTM F1258	Standard
United States	Medical Priority Dispatch System	IAED MPDS	Standard
United States	29 CFR 1910.1030 (OSHA), Bloodborne Pathogens	29 CFR 1910.1030 (OSHA)	Regulation
United States	29 CFR 1910.1030 (OSHA), Bloodborne Pathogens	29 CFR 1910.1030 (OSHA)	Regulation
United States	Ground Interfacility Standards	CAMTS – 9TH Edition-7	Best Practice
Canada	Community Paramedicine in Canada	EMSCC	Best Practice

Element 3: Paramedic Services			
United States	National Consensus Conference on Community Paramedicine	University of Washington, School of Medicine	Best Practice
United States	Community Paramedicine - Evaluation Tool	US Dept, Of Health and Human Services , Mar. 2012	Best Practice
United States	Community Paramedic Program Handbook	Western Eagle County Health Services District, 2011	Best Practice
United States	Ambulance and Paramedical Services	NZS 8156:2008	Best Practice
United States	Infection Prevention and Control Guidance for EMS Providers	Metropolitan Chicago Healthcare Council, 2012	Best Practice
United States	Guide to Managing an Emergency Service Infection Control Program	US Fire Administration, 2002	Best Practice

Personnel

Element 4 : Personnel			
Jurisdiction	Title	Reference	Ref Type
Canada	Paramedics (NOC 3234) HRSDC	NOC3234	Regulation
Canada	Paramedics (NOC 3234) – Essential Skills – HRSDC	NOC3234	Regulation
Canada	Agreement on Internal Trade – Labour Mobility Tool (www.canadianparamedicmobility.com) – this tool links to each provincial and territorial scopes of practice to support labour mobility		Regulation
Canada	Alberta Occupational Competency Profile (compliance with Health Professions Act)		Regulation

Element 4 : Personnel			
Jurisdiction	Title	Reference	Ref Type
Canada	National Occupational Competency Profile for Paramedics(NOCP) – Paramedic Association of Canada – 2011 (www.paramedic.ca)		Best Practice
Australia	Australasian Competency Standards for Paramedics, Paramedics Australia, 2011		Best Practice
Australia	Options for regulation of paramedics, Australian Health Ministers' Advisory Council, July 2012		Best Practice
Australia	Paramedic Professional Competency Standards V2 – Council of Ambulance Authorities(CAA) Australia, 2010		Best Practice
Europe	Paramedic Science, Benchmark Statement : Health Care Programs, 2004, Quality Assurance Agency for Higher Education		Best Practice
Europe	Standards of proficiency- Paramedics, UK Health and Care Professions Council, 2012		Best Practice
United States	Standard Practice for Training the Emergency Medical Technician (Basic)	ASTM F1031	Standard
United States	ASTM F1031-13: Standard Practice for Training the Emergency Medical Technician	ASTM F1031-13	Standard
United States	Standard Practice for Qualifications, Responsibilities, and Authority of Individuals and Institutions Providing Medical Direction of Emergency Medical Services	ASTM F1149	Standard
United States	ASTM F1149-93(2013): Standard Practice for Qualifications, Responsibilities, and Authority of Individuals and Institutions Providing Medical Direction of Emergency Medical Services	ASTM F1149-93(2013)	Standard
United States	Standard Guide for Qualification and Training of EMS Air Medical Patient Care Providers	ASTM F1229	Standard
United States	ASTM F1229-01(2012): Standard Guide for Qualification and Training of EMS Air Medical Patient	ASTM F1229-01(2012)	Standard

Element 4 : Personnel			
Jurisdiction	Title	Reference	Ref Type
	Care Providers		
United States	Standard Guide for Selection and Practice of Emergency Medical Services Instructor for Emergency Medical Technician (EMT) Training Programs	ASTM F1256	Standard
United States	Standard Guide for Selection and Practice of Emergency Medical Services Instructor for Advanced Emergency Medical Technician	ASTM F1257	Standard
United States	Standard Guide for Training the Emergency Medical Technician to Perform Patient Examination Techniques	ASTM F1285	Standard
United States	ASTM F1285-13: Standard Guide for Training the Emergency Medical Technician to Perform Patient Examination Techniques	ASTM F1285-13	Standard
United States	Standard Practice for Training Instructor Qualification and Certification Eligibility of Emergency Medical Dispatchers	ASTM F1552	Standard
United States	ASTM F1552-94(2009): Standard Practice for Training Instructor Qualification and Certification Eligibility of Emergency Medical Dispatchers	ASTM F1552-94(2009)	Standard
United States	Standard Guide for Training the Emergency Medical Technician (Paramedic)	ASTM F1651	Standard
United States	ASTM F1651-95(2009): Standard Guide for Training the Emergency Medical Technician (Paramedic)	ASTM F1651-95(2009):	Standard
United States	Standard Guide for Training Emergency Medical Services Ambulance Operations	ASTM F1705	Standard
United States	ASTM F1705-96(2012): Standard Guide for Training Emergency Medical Services Ambulance Operations	ASTM F1705-96(2012)	Standard
United States	NFPA 1404: Standard for Fire Service Respiratory Protection Training, 2013 Edition	NFPA 1404	Standard

Element 4 : Personnel			
Jurisdiction	Title	Reference	Ref Type
United States	NFPA 1500: Standard on Fire Department Occupational Safety and Health Program, 2013 Edition	NFPA 1500	Standard
United States	NFPA 472: Standard for competence of responders to hazardous materials/weapons of mass destruction incidents (Chapter 5)	NFPA 472	Standard
United States	NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, 2013 Edition	NFPA 472	Standard
United States	Standard for competence of responders to hazardous materials/weapons of mass destruction incidents (Chapter 5)	NFPA 472	Standard
United States	NFPA 473: Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents	NFPA 473	Standard
United States	Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents	NFPA 473	Standard
United States	Standard for Fire Officer Professional Qualifications	NFPA 1021	Standard
United States	Strategy for a National EMS Culture of Safety, 2013,		Best Practice
United States	Education Agenda for the Future: A Systems Approach, Emergency Medical Services, NHTSA, 1998		Best Practice
United States	National Emergency Medical Services Education Standards, US Department of Transportation, National Highway Traffic Safety Administration(NHTSA), 2009		Best Practice
United States	National EMS Scope of Practice Model, NHTSA, 2007		Best Practice

Communications

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
International	Health informatics -- Messages and communication -- Web access reference manifest	ISO 10159:2011	Standard
International	Health informatics -- Point-of-care medical device communication -- Part 90101: Analytical instruments -- Point-of-care test	ISO 11073-90101:2008	Standard
International	Health informatics -- Standard communication protocol -- Part 91064: Computer-assisted electrocardiography	ISO 11073-91064:2009	Standard
International	Health informatics -- Identification of medicinal products -- Data elements and structures for the unique identification and exchange of regulated information on substances	ISO 11238:2012	Standard
International	Health informatics -- Identification of medicinal products -- Data elements and structures for the unique identification and exchange of regulated information on pharmaceutical dose forms, units of presentation, routes of administration and packaging	ISO 11239:2012	Standard
International	Health informatics -- Identification of medicinal products -- Data elements and structures for the unique identification and exchange of	ISO 11240:2012	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	units of measurement		
International	Health informatics -- Identification of medicinal products -- Data elements and structures for the unique identification and exchange of regulated medicinal product information	ISO 11615:2012	Standard
International	Health informatics -- Identification of medicinal products -- Data elements and structures for the unique identification and exchange of regulated pharmaceutical product information	ISO 11616:2012	Standard
International	Health informatics -- Digital imaging and communication in medicine (DICOM) including workflow and data management	ISO 12052:2006	Standard
International	Health informatics -- Service architecture -- Parts 1 to 3	ISO 12967:2009	Standard
International	Health informatics -- Clinical knowledge resources -- Metadata	ISO 13119:2012	Standard
International	Health informatics -- Syntax to represent the content of healthcare classification systems -- Classification Markup Language (ClaML)	ISO 13120:2013	Standard
International	Health informatics -- Electronic health record communication --	ISO 13606:2008	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	Parts 1 to 5		
International	Health informatics -- Public key infrastructure -- Parts 1 to 3	ISO 17090:2013	Standard
International	Health informatics -- Vocabulary for terminological systems	ISO 17115:2007	Standard
International	Health informatics -- Messages and communication -- Web access to DICOM persistent objects	ISO 17432:2004	Standard
International	Health informatics -- Integration of a reference terminology model for nursing	ISO 18104:2003	Standard
International	Health Informatics -- Messages and communication -- Format of length limited globally unique string identifiers	ISO 18232:2006	Standard
International	Health informatics -- Categorical structure for terminological systems of surgical procedures	ISO 1828:2012	Standard
International	Health informatics -- Requirements for an electronic health record architecture	ISO 18308:2011	Standard
International	Health informatics -- Clinical analyzer interfaces to laboratory information systems -- Use profiles	ISO 18812:2003	Standard
International	Health informatics -- Health cards -- General characteristics	ISO 20301:2006	Standard
International	Health informatics -- Health cards -- Numbering system and registration procedure for issuer	ISO 20302:2006	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	identifiers		
International	Health informatics -- Harmonized data types for information interchange	ISO 21090:2011	Standard
International	Health informatics -- Directory services for healthcare providers, subjects of care and other entities	ISO 21091:2013	Standard
International	Health informatics -- Patient healthcard data -- Parts 1 to 8	ISO 21549:2013	Standard
International	Health informatics -- Health indicators conceptual framework	ISO 21667:2010	Standard
International	Health informatics -- Guidelines on data protection to facilitate trans-border flows of personal health information	ISO 22857:2004	Standard
International	Health informatics -- Genomic Sequence Variation Markup Language (GSVML)	ISO 25720:2009	Standard
International	Health informatics -- Audit trails for electronic health records	ISO 27789:2013	Standard
International	Health informatics -- Information security management in health using ISO/IEC 27002	ISO 27799:2008	Standard
International	Electronic Health Record-System Functional Model, Release 1.1	ISO/HL7 10781:2009	Standard
International	Health informatics -- HL7 version 3 -- Reference	ISO/HL7 21731:2006	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	information model -- Release 1		
International	Data Exchange Standards -- Health Level Seven Version 2.5 -- An application protocol for electronic data exchange in healthcare environments	ISO/HL7 27931:2009	Standard
International	Data Exchange Standards -- HL7 Clinical Document Architecture, Release 2	ISO/HL7 27932:2009	Standard
International	Health informatics -- Common terminology services, release 1	ISO/HL7 27951:2009	Standard
International	Health informatics -- Individual case safety reports (ICSRs) in pharmacovigilance -- Parts 1 and 2	ISO/HL7 27953:2011	Standard
International	Health informatics -- Point-of-care medical device communication -- Part 10101: Nomenclature	ISO/IIEEE 11073-10101:2004	Standard
International	Health informatics -- Point-of-care medical device communication -- Part 10201: Domain information model	ISO/IIEEE 11073-10201:2004	Standard
International	Health informatics -- Personal health device communication -- Part 10404: Device specialization -- Pulse oximeter	ISO/IIEEE 11073-10404:2010	Standard
International	Health informatics -- Personal health device communication -- Part 10406: Device specialization -- Basic electrocardiograph (ECG) (1- to	ISO/IIEEE 11073-10406:2012	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	3-lead ECG)		
International	Health informatics -- Personal health device communication -- Part 10407: Device specialization -- Blood pressure monitor	ISO/IEEE 11073-10407:2010	Standard
International	Health informatics -- Personal health device communication -- Part 10408: Device specialization -- Thermometer	ISO/IEEE 11073-10408:2010	Standard
International	Health informatics -- Personal health device communication -- Part 10415: Device specialization -- Weighing scale	ISO/IEEE 11073-10415:2010	Standard
International	Health informatics -- Personal health device communication -- Part 10417: Device specialization -- Glucose meter	ISO/IEEE 11073-10417:2010	Standard
International	Health informatics -- Personal health device communication -- Part 10420: Device specialization -- Body composition analyzer	ISO/IEEE 11073-10420:2012	Standard
International	Health informatics -- Personal health device communication -- Part 10421: Device specialization -- Peak expiratory flow monitor (peak flow)	ISO/IEEE 11073-10421:2012	Standard
International	Health informatics -- Personal health device communication -- Part 10471: Device specialization - Independent	ISO/IEEE 11073-10471:2010	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	living activity hub		
International	Health Informatics -- Personal health device communication -- Part 10472: Device specialization -- Medication monitor	ISO/IEEE 11073-10472:2012	Standard
International	Health informatics -- Point-of-care medical device communication -- Part 20101: Application profiles -- Base standard	ISO/IEEE 11073-20101:2004	Standard
International	Health informatics -- Personal health device communication -- Part 20601: Application profile -- Optimized exchange protocol	ISO/IEEE 11073-20601:2010	Standard
International	Health informatics -- Point-of-care medical device communication -- Part 30200: Transport profile -- Cable connected	ISO/IEEE 11073-30200:2004	Standard
International	Health informatics -- Point-of-care medical device communication -- Part 30300: Transport profile -- Infrared wireless	ISO/IEEE 11073-30300:2004	Standard
International	Health informatics -- Point-of-care medical device communication -- Part 30400: Interface profile -- Cabled Ethernet	ISO/IEEE 11073-30400:2012	Standard
International	Health informatics -- Clinical stakeholder participation in the	ISO/TR 11487:2008	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	work of ISO TC 215		
International	Health informatics -- Information security management for remote maintenance of medical devices and medical information systems -- Part 1: Requirements and risk analysis	ISO/TR 11633-1:2009	Standard
International	Health informatics -- Information security management for remote maintenance of medical devices and medical information systems -- Part 2: Implementation of an information security management system (ISMS)	ISO/TR 11633-2:2009	Standard
International	Health Informatics -- Dynamic on-demand virtual private network for health information infrastructure	ISO/TR 11636:2009	Standard
International	Health informatics -- Guidelines for terminology development organizations	ISO/TR 12309:2009	Standard
International	Business requirements for health summary records -- Parts 1 and 2	ISO/TR 12773:2009	Standard
International	Knowledge management of health information standards	ISO/TR 13054:2012	Standard
International	Health Informatics -- Clinical document registry federation	ISO/TR 13128:2012	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
International	Health informatics -- Personal health records -- Definition, scope and context	ISO/TR 14292:2012	Standard
International	Health informatics -- Capacity-based eHealth architecture roadmap -- Part 1: Overview of national eHealth initiatives	ISO/TR 14639-1:2012	Standard
International	Health informatics -- Interoperability of telehealth systems and networks -- Parts 1 and 2: Introduction and definitions	ISO/TR 16056:2004	Standard
International	Health informatics - Health informatics profiling framework	ISO/TR 17119:2005	Standard
International	Health informatics -- Interoperability and compatibility in messaging and communication standards -- Key characteristics	ISO/TR 18307:2001	Standard
International	Health informatics -- Electronic health record -- Definition, scope and context	ISO/TR 20514:2005	Standard
International	Health informatics -- Trusted end-to-end information flows	ISO/TR 21089:2004	Standard
International	Health informatics -- Security requirements for archiving of electronic health records -- Guidelines	ISO/TR 21548:2010	Standard
International	Health informatics -- Use of mobile wireless communication and computing technology in healthcare facilities -- Recommendations for	ISO/TR 21730:2007	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	electromagnetic compatibility (management of unintentional electromagnetic interference) with medical devices		
International	Health informatics - Good principles and practices for a clinical data warehouse	ISO/TR 22221:2006	Standard
International	Health informatics -- Functional characteristics of prescriber support systems	ISO/TR 22790:2007	Standard
International	Health informatics -- Business requirements for an international coding system for medicinal products	ISO/TR 25257:2009	Standard
International	Health informatics -- Measures for ensuring patient safety of health software	ISO/TR 27809:2007	Standard
International	Health informatics -- Medical waveform format -- Part 92001: Encoding rules	ISO/TS 11073-92001:2007	Standard
International	Health informatics -- Sharing of OID registry information	ISO/TS 13582:2013	Standard
International	Health Informatics - Classification of purposes for processing personal health information	ISO/TS 14265:2011	Standard
International	Health informatics -- Interoperability of telelearning systems	ISO/TS 16058:2004	Standard
International	Health informatics -- Controlled health terminology -- Structure	ISO/TS 17117:2002	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	and high-level indicators		
International	Health informatics -- Functional and structural roles	ISO/TS 21298:2008	Standard
International	Health informatics -- Security requirements for archiving of electronic health records -- Principles	ISO/TS 21547:2010	Standard
International	Health informatics -- Identification of subjects of health care	ISO/TS 22220:2011	Standard
International	Health informatics -- Electronic reporting of adverse drug reactions	ISO/TS 22224:2009	Standard
International	Health informatics -- Privilege management and access control -- Parts 1 to 3	ISO/TS 22600:2006	Standard
International	Health informatics -- Conceptual framework for patient findings and problems in terminologies	ISO/TS 22789:2010	Standard
International	Health informatics -- Pseudonymization	ISO/TS 25237:2008	Standard
International	Health informatics -- Classification of safety risks from health software	ISO/TS 25238:2007	Standard
International	Health informatics -- Provider identification	ISO/TS 27527:2010	Standard
International	Health informatics -- Document registry framework	ISO/TS 27790:2009	Standard
International	Health informatics -- Deployment of a clinical data	ISO/TS 29585:2010	Standard

Element 5 : Communications			
Jurisdiction	Title	Reference	Ref Type
	warehouse		
United States	Standard Practice for View of Emergency Medical Care in the Electronic Health Record	ASTM E1744	Standard
United States	Standard Guide for Emergency Medical Services System (EMSS) Telecommunications	ASTM F1220	Standard
United States	Standard Practice for Communicating an EMS Patient Report to Receiving Medical Facilities	ASTM F2076	Standard
United States	Standard for the installation, maintenance, and use of emergency services communication systems	NFPA 1221	Standard
United States	NENA - Accessibility Documents	http://www.nena.org/?page=Standards	Standard
United States	NENA - PSAP Equipment & Systems Documents	http://www.nena.org/?page=Standards	Standard
United States	NENA - Data Structures & Management Documents		Standard
United States	NENA - Multiline Telephone System (MLTS) and Private Branch Exchange (PBX) Documents		Standard
United States	NENA - Network Documents		Standard
United States	Communications	CAMTS – 9TH Edition-3	Best Practice

Program Management

Element 6 : Program Management			
Jurisdiction	Title	Reference	Ref Type
Canada	Emergency Medical Services – Accreditation Canada – Qmentum Program		Best Practice
Canada	CAN/CSA-Z1000-06 (R2011) - Occupational Health and Safety Management	CAN/CSA-Z1000-06 (R2011)	Standard
Canada	CAN/CSA-Z1003-13/BNQ 9700-803/2013 - Psychological health and safety in the workplace - Prevention, promotion, and guidance to staged implementation	CAN/CSA-Z1003-13/BNQ 9700-803/2013	Standard
Canada	CSA Z1004-12 - Workplace ergonomics - A management and implementation standard	CSA Z1004-12	Standard
United States	Safe Practices for Fleet Motor Vehicle Operation	ANSI/ASSE Z15.1-2006	Standard
United States	Standard Guide for Structures and Responsibilities of Emergency Medical Services Systems Organizations	ASTM F1086	Standard
International	ISO 39001 – Road Traffic Safety Management Systems	ISO 39001	Standard
United States	Standard Terminology Relating to Emergency Medical Services	ASTM F1177	Standard
United States	Standard Guide for Establishing and Operating a Public Information, Education, and Relations Program for Emergency Medical Service Systems	ASTM F1268	Standard
United States	Standard Guide for Scope of Performance of Emergency Medical Services Ambulance Operations	ASTM F1517	Standard
United States	Standard Guide for Establishing Operating Emergency Medical Services and Management Information Systems, or Both	ASTM F1629	Standard

Element 6 : Program Management			
Jurisdiction	Title	Reference	Ref Type
United States	Standard Guide for Providing Essential Data Needed in Advance for Prehospital Emergency Medical Services	ASTM F1652	Standard
United States	Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments	NFPA 1710	Standard
United States	Guide for emergency medical services and systems	NFPA 450	Standard
United States	Organization	CAAS 101	Best Practice
United States	Inter-Agency Relations	CAAS 102	Best Practice
United States	Management	CAAS 103	Best Practice
United States	Financial Management	CAAS 104	Best Practice
United States	Community Relations and Public Affairs	CAAS 105	Best Practice
United States	Human Resources	CAAS 106	Best Practice
United States	Clinical Standards	CAAS 201	Best Practice
United States	Safe Operations and Managing Risk	CAAS 202	Best Practice
United States	Equipment and Facilities	CAAS 203	Best Practice
United States	Communications Center	CAAS 204	Best

Element 6 : Program Management			
Jurisdiction	Title	Reference	Ref Type
			Practice
United States	Management and Quality	CAMTS – 9th Edition-1	Best Practice
United States	Patient Care	CAMTS – 9th Edition-2	Best Practice
United States	Safety and Environment	CAMTS – 9th Edition-4	Best Practice

New Technology

Element 7: New Technology			
Jurisdiction	Title	Reference	Ref Type
United States	NENA - Next Generation 9-1-1 (NG9-1-1) Documents		standard
United States	NENA - Non-Traditional Documents		Standard
United States	NENA - PSAP Operations - Contingency Planning		standard
United States	NENA - PSAP Operations - Human Resources		standard
United States	NENA - PSAP Operations - Standard Operating Procedures		standard
United States	NENA - Public Education & PSAP Training		standard
United States	NENA - Wireless 9-1-1 Integration Documents		standard
Canada	Policy for the Use of 700 MHz Systems for Public Safety Applications and other Limited Use of Broadcasting Spectrum	RP - 006	Regulation

Canada	Licensing Framework for Mobile Broadband Services 700MHz Bank		Regulation
Canada	Report on Matters Related to Emergency 911	CRTC, 2013	Best Practice
Japan	700 MHz Band Intelligent Transport Systems	ARIB STD T109	Standard
United States	700 MHz Public Safety Broadband Service Rules Report	FCC 13-137	Regulation
United States	700 MHz Broadband for Mission Critical Public Safety Data, A Technical Discussion		Best Practice

Emergency Management

Element 8 : Emergency Management			
Jurisdiction	Title	Reference	Ref Type
Canada	CSA Z1600-14 – Emergency and Continuity Management Programs	CSA Z1600-14	Standard
United States	Standard on Emergency Services Incident Management System	NFPA 1561	Standard
United States	NFPA 1600: Standard on Disaster/Emergency Management and Business Continuity Programs, 2013 Edition	NFPA 1600	Standard
United States	29 CFR 1910. 120 (OSHA), Hazardous Waste Operations and Emergency Response	29 CFR 1910. 120 (OSHA)	Regulation
United States	OSHA 3370 - Best Practices for Protecting Emergency Medical Services (EMS) Responders During Treatment and Transport of Victims of Hazardous Substance Releases	OSHA 3370	Regulation

Annex B – Survey Results

In January 2014, an online survey was distributed to members of the Paramedic Community to help validate the Standards Framework and to obtain stakeholder feedback on the preliminary areas of focus. A total of 568 responses were received and analyzed. The following is a summary of the survey results.

Question 1 – Demographics: Level of Service

Current Level of Practice Please select one that best reflects your current professional standing		
Answer Options	Response Percent	Response Count
EMT/EMR	7.7%	44
Primary Care Paramedic	49.3%	280
Advanced Care Paramedic	19.0%	108
Critical Care Paramedic	1.8%	10
Communications Officer (Dispatcher)	0.7%	4
Management(supervisor, duty officer, chief)	12.3%	70
Educator	2.1%	12
Regulator	0.7%	4
Supplier/Manufacturer	0.5%	3
Other	5.8%	33
Other (please specify)		45
<i>answered question</i>		568
<i>skipped question</i>		0

Question 2 – Demographics: Province/Territory of Practice

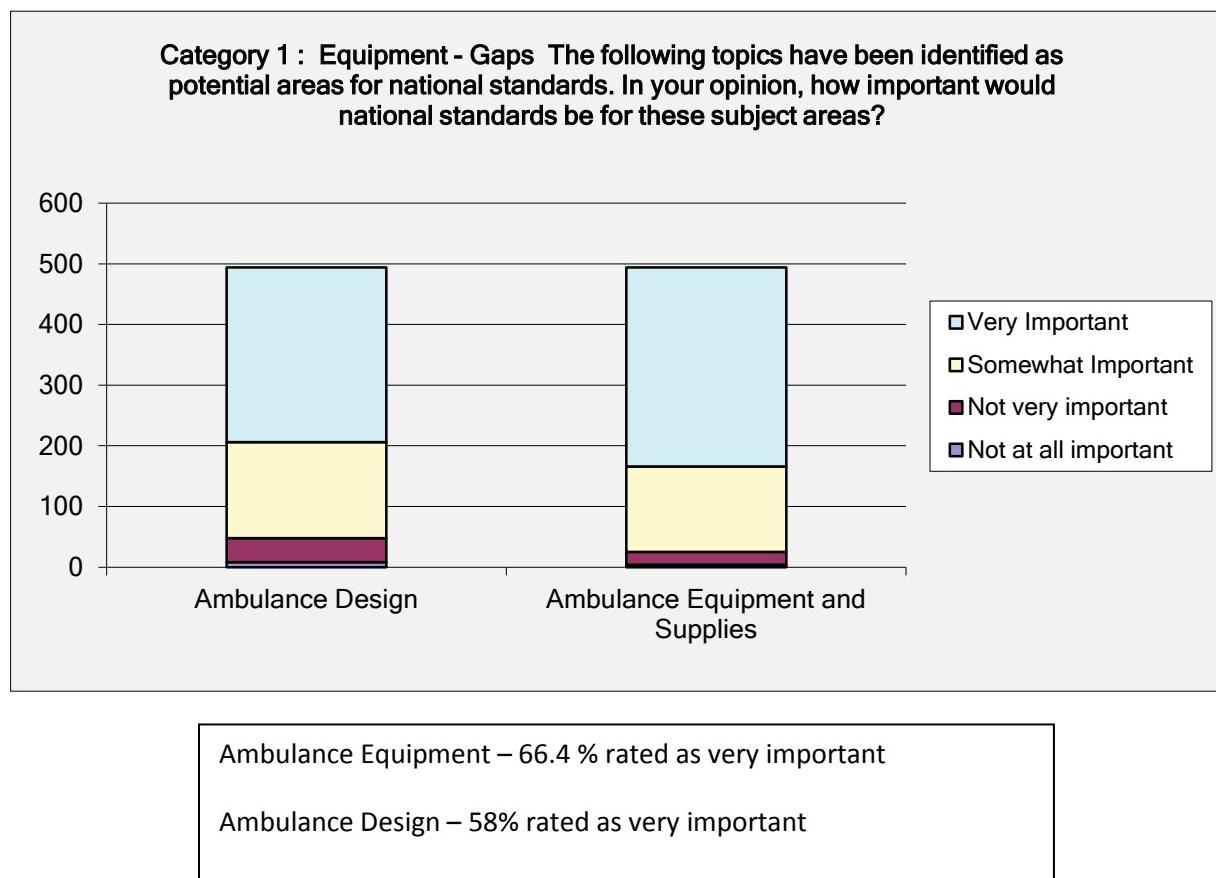
Please indicate your Province/Territory of Practice		
Answer Options	Response Percent	Response Count
Alberta	5.1%	29
BC	11.4%	65
Manitoba	35.0%	199
New Brunswick	5.3%	30
Newfoundland	1.6%	9
Northwest Territories	0.4%	2
Nova Scotia	1.6%	9
Nunavut	0.2%	1
Ontario	37.0%	210
PEI	1.6%	9
Quebec	4.0%	23
Saskatchewan	3.3%	19
Yukon	0.7%	4
<i>answered question</i>		568
<i>skipped question</i>		0

Question 3 – Equipment

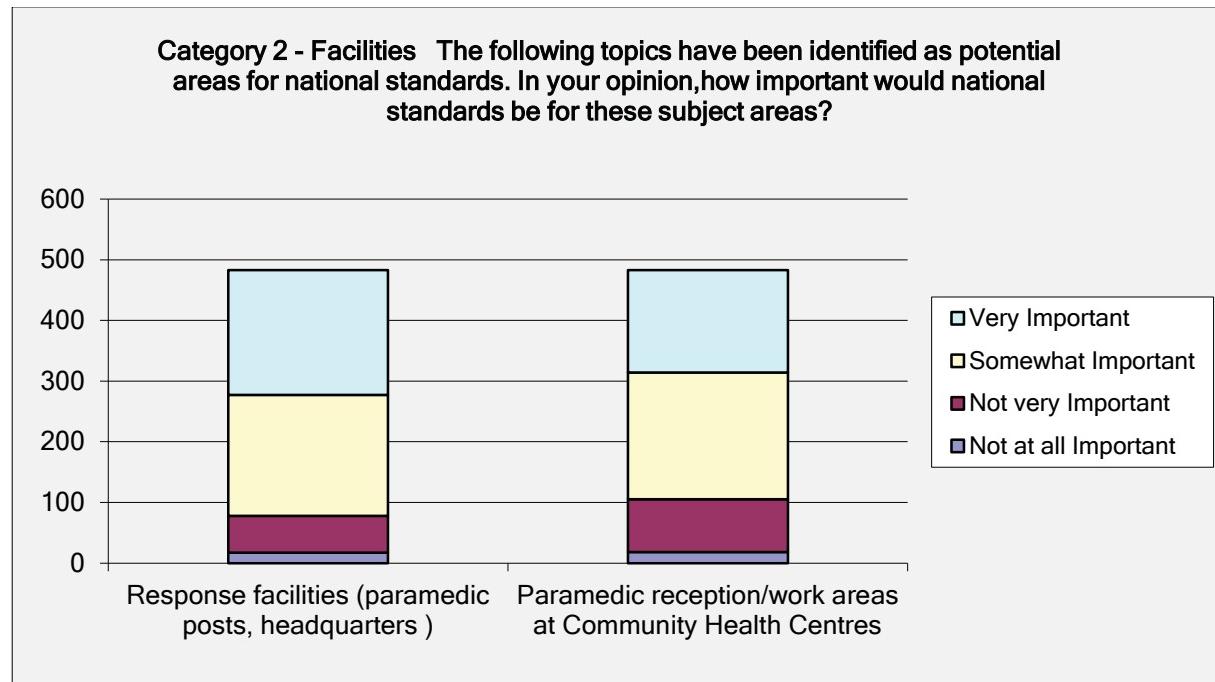
Suggestions for additions:

- Uniforms
- Power lift cots/stretchers
- Environmental gear (e.g. for extreme cold & hot)
- Protective gear (flak jackets, body armour)
- Head blocking
- Defibrillators
- Man down alerting system
- Non emergency patient transfers
- Extrication equipment
- Specialty transportation – pediatric and bariatric
- Mobile command units
- Medical supplies

Question 4 – Equipment: Gaps and Areas of Focus



Question 5 – Facilities: Gaps and Key Areas of Focus



Suggestions for additions

- Crew rooms in hospitals
- Paramedic posts
- Industrial site standby /mobile treatment centres
- Cleaning facilities

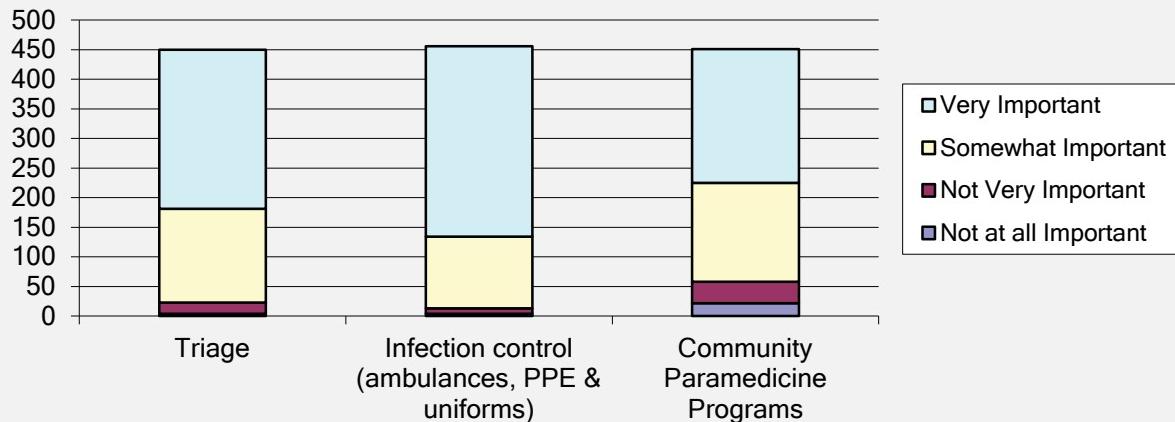
Question 6 – Paramedic Services

Suggestions for additions:

- Driving standards
- Urban vs. rural
- Standards of practice for non traditional health care settings
- Research – lack of evidence for most pre-hospital care
- Mass gatherings
- Industrial paramedicine
- Infant and pediatric transport
- Emergency response with vehicle
- Wilderness SAR and high angle rescue
- Air medical transport

Question 7 – Paramedic Services: Gaps and Key Areas of Focus

Category 3: Paramedic Services - Gaps The following topics have been identified as potential areas for national standards. In your opinion, how important would national standards be for these subject areas?



Infection Control – 70.6 % rated as very important

Community Paramedicine – 57 % rated as very important

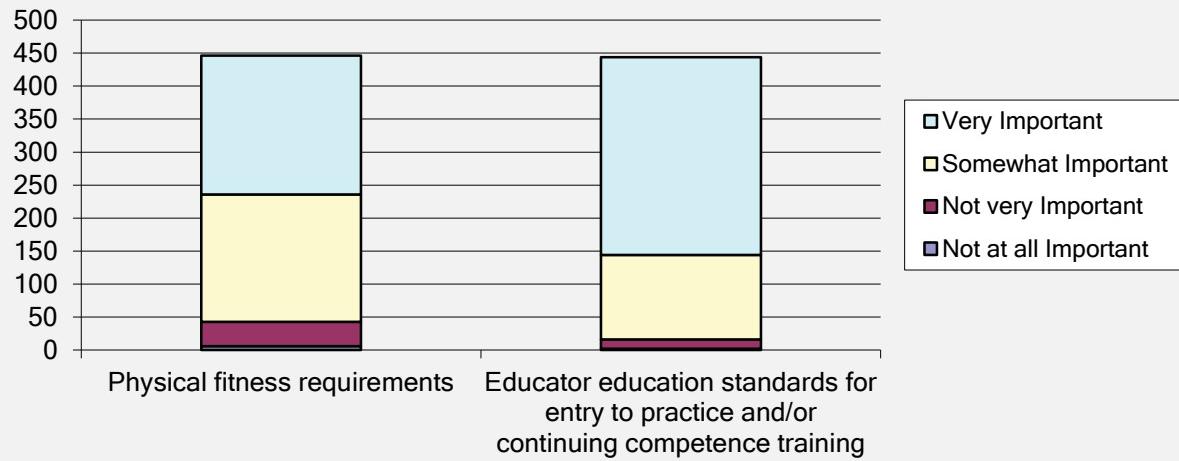
Question 8 – Personnel

Suggestions for Additions:

- Pre-employment psychological assessment like police
- Driving competence
- Education standards for preceptors /mentoring
- Interprovincial standard licensing
- More 24 hour staffing
- Add Intermediate Care Paramedic
- National registry
- Duration of hours worked
- Wellness
- Supervision of new staff

Question 9 – Personnel – Gaps and Key Areas of Focus

Category 4 : Personnel - Key Gaps The following topics have been identified as potential gaps for national standards. In your opinion, how important would national standards be for these subject areas?

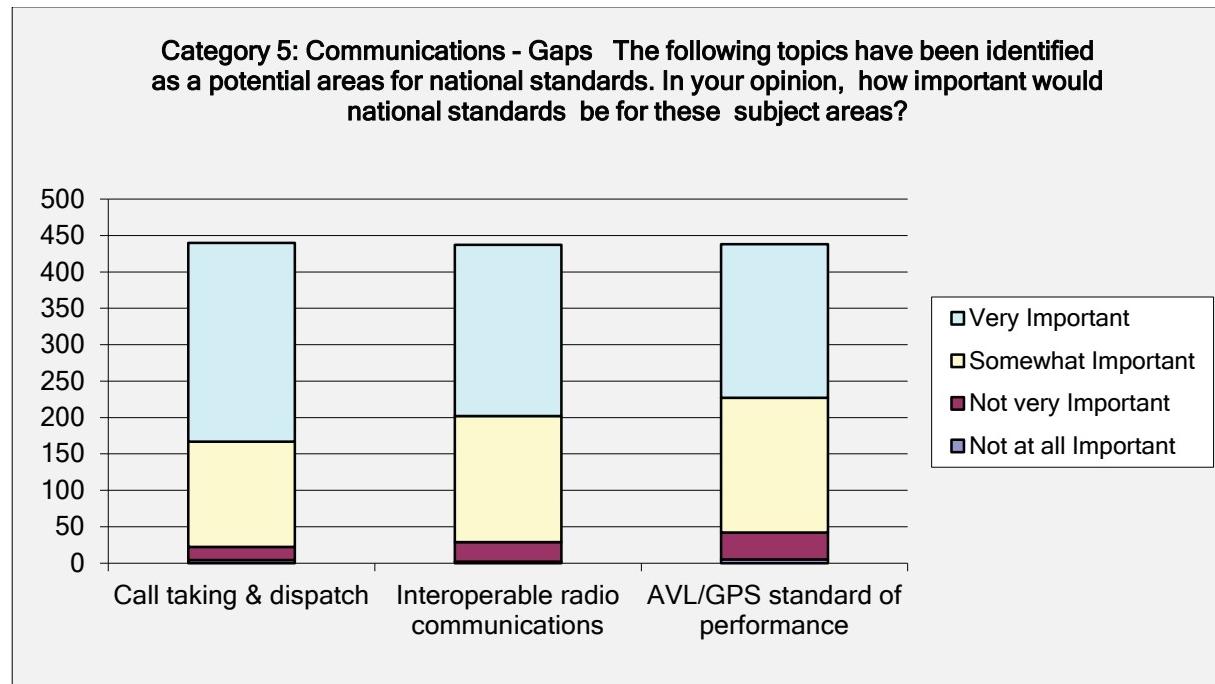


Question 10 – Communications

Suggestions for additions :

- Public and media relations & soft skills for communications
- Interoperability between provinces
- Portable phone images – transmission
- Recording driver safety
- Integration between ePCR and hospital data
- Electronic medical records

Question 11 – Communications : Gaps and Key Areas of Focus



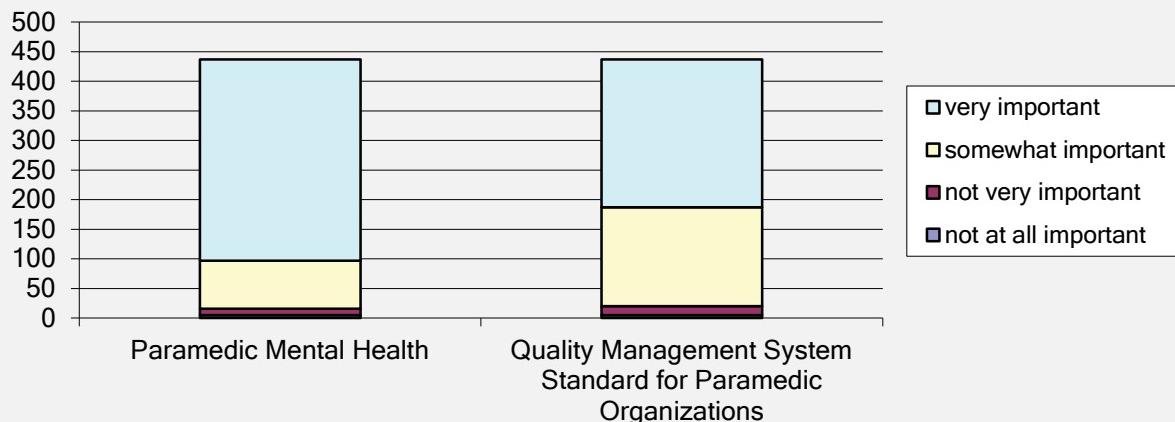
Question 12 – Program Management

Suggestions for additions:

- Disaster management
- Mental health assistance (long term, access)
- Critical incident stress management
- Evidence-based research
- Performance indicators for field supervision
- Compliance testing for programs – need national data on program metrics

Question 13 – Program Management - Gaps and Key Areas of Focus

Category 6 : Program Management - Gaps The following topics have been identified as potential areas for national standards. In your opinion, how important would national standards be for these subject areas?



Paramedic Mental Health – 77.8 % rated as very important

Question 14 – New Technology

Suggestions for Additions

- Power stretchers
- Pharmacology
- Integration of technology with care
- Dispatch mapping info needs to be transferred to ambulance
- New treatments
- Tablets and acr use
- Feedback tools for CPR
- Community engagement through social media
- Patient care reports – mobile data management

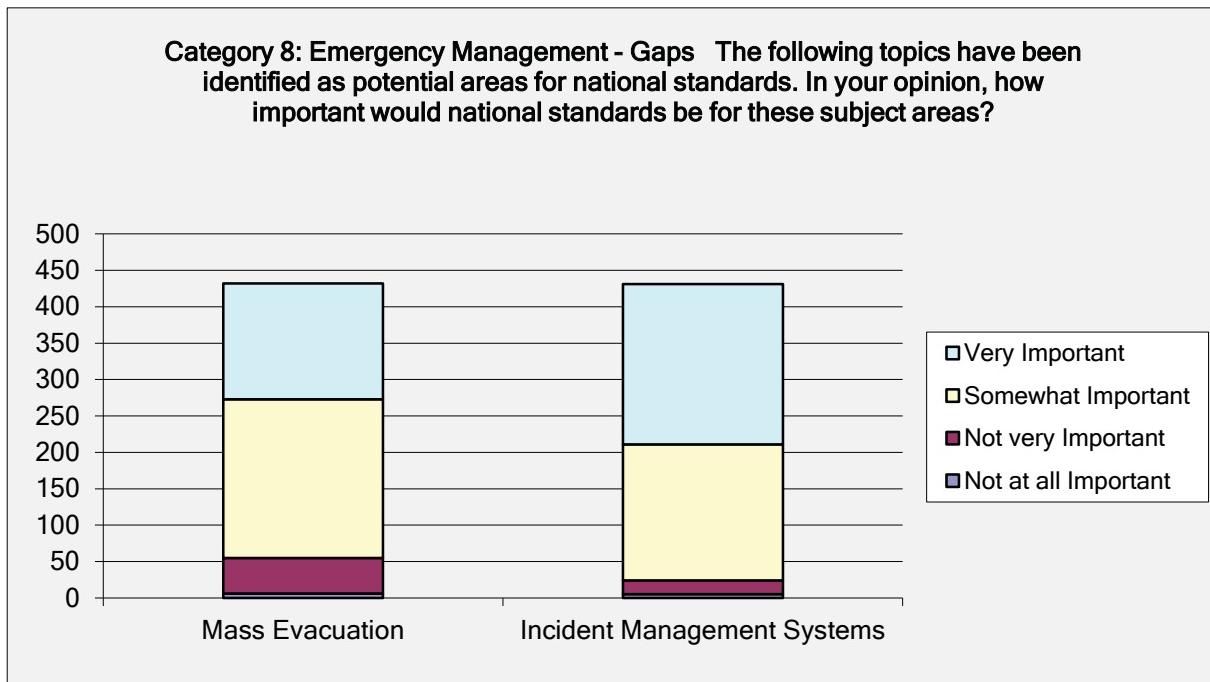
Question 16 – Emergency Management

Suggestions for Additions:

- Hazmat & fire scene rehab
- Integration of volunteer organizations into disaster planning

- Unified command principles
- Off-road rescue – SAR
- Inter-operability with other agencies
- Working with humanitarian aid agencies (mgt of large number of bodies)
- Rural vs. urban

Question 17 – Emergency Management – Gaps and Key Areas of Focus



Question 17 – Do you have any other comments or suggestions ?

(Note: these are verbatim responses)

I believe that more attention has to be directed to Communication Centres in way of Staffing, environmental, Equipment and Training.

There really needs to be a standard physical training/fitness within the EMS field. There are too many paramedics getting injured because they are falling behind when it comes to staying fit to do the job.

Although there are different cultural needs geographically, many, if not all categories should be considered for a national standard.

In general, I think that national standards are important where they govern the actual patient care as far as the medicine, the equipment etc. where management systems are involved I find less importance for

national standards as local systems may differ in their resources, the population served, geography etc and will require different management systems.

Expect CHANGE to be welcomed by some and shunned by others with a lot of trial and error especially in small and rural areas...where technology doesn't work so well yet!

Yes. National licensing, just like nurses etc. Telehealth over triages and activates EMS and often we find we don't need to be there. Let paramedics run the service tied in w community paramedicine. Experienced paramedics are excellent at making those common sense recommendations where the nurses hesitate.

I don't know how it runs in the other prov. in Canada but here a lot of the time we don't even have a chance to eat our meals. I am not saying if a 911 call comes in that we would not respond to the call. But why can't a return transfer or going someplace for stand by coverage wait until we had a chance to eat. It seems like we are forced to stop and grab junk food like cakes, pop and chips.

"When will there be an updated BLS Standards with realistic and evidence based practices included?

What protection does a paramedic have from the law when all they're trying to do is in the patient's best intention?"

Regulated shift patterns, start and end times to shifts. How many 24 hr cars to call volume or day/afternoon cars per call volume have a minimum amount of ambulances to be on?

As a PCP working in Alberta, BC and New Brunswick there is nearly no standards of practice between the provinces even though my course followed the nocp guidelines and the provinces are part of the CPA. This definitely needs to be addressed. When skills are met under nocp they shouldn't require gap training if trained at the PCP level. Yes they should at the EMT level but not PCP.

Fair pay for all emergency service workers. At no time should a paramedic's time be worth less than an honest living wage.

Level up until all the provinces are equal as far as competency, and hopefully pay equally same job, same...

I am too old to move to another province but portability with national standards would be a great step in the right direction.

National standard on Ergonomics, Health & Safety, Practitioner Mental Health, and Quarters/Facility Priority. Without healthy providers, rest moot points.

Scope of practice standards for rural vs urban vs mixed services. Different pt populations, distance from ER, ICU, cath lab, trauma centre etc... Should determine protocols to truly "bring the ER to the patient".

Urban vs rural have very different needs in ambulance design and types of equipment. Let the paramedics who actually work on these units have significant input to layout and specs of units.

cheapest bidder does not cut it. striker power stretchers with all accessories should be the minimum standard for an urban ambulance. we need more options as paramedics other than transport to hospital or pt refusal... transport to closest walk in clinic would be a game changer. pt would still be in a medical facility to see a Dr but not in a very back logged ER.

Good survey. My only thought is a national standard would help better the reflection to the public of all EMS systems.

I would like to see data collected from across Canada on things such as numbers of ambulance collisions, numbers of paramedics and the different levels, types of calls broken down by province, region and cities, etc.

I would like to point out that topics are good however, to be a leader in this field training is required. To many times we put a person in without showing them how and to be leader. without some sort of training we will just fall into the same trap between management and Labour.

CTAS system doesn't always have an appropriate category for all patients.

overall this survey has captured the big topics; I think more standardization is needed to help grow our profession. the quality of oversight, system support and education would be the primary concerns I would have.

I feel that all provinces should have the same scope of practice for all levels (ex. A pcp in nb is the same skill set and scope as a pcp in Ns or BC. And have a national registry that would allow more fluid movement between provinces. It is fairly easy to do now. But bit could be an easier process

A national registry would be nice!

Vehicles should have the ability to have rear facing emerg. lights and rear facing secondary lights on to prevent on lookers and creating traffic congestion. Ambulances should also be equipped with a directional bar.

Nationally EMS should be standard coast to coast. It only makes sense. Globally it should standard too. It only makes sense.

Station Standards in my opinion are in some areas very poor to bordering on simply unhealthy.

I am not certain that many of the questions could be answered in any other than very important. Good management for instance has to be answered as very important. I do not think those questions are going to help your deliberations. Maybe you have already considered that and I am missing your intention.

Inter provincial licensing

This will likely be either not done properly, or ignored. You need to embrace quality improvement (i.e. Deming, TPS, LEAN), and develop your principles before you try to tell everyone what to do. Otherwise

just stop now because you are going to make it worse. Especially if you try to transplant Ontario's ridiculous system on everyone else.

"Increase paramedic skill set. Make this universal.

Triage could be done by paramedics, who from a research perspective are better at it than nurses.

CTAS is often not used exactly as per the outlined criteria."

different regions have different geography; setting standards must take into account that what works in Toronto probably won't be very relevant in northern Manitoba. transport times are different, weather is different, even regular patient types are different.

Paramedic health: lunch, down time, end of shift overtime. levels of stress, if or how often they exercise.

More consultation with front line paramedics. Subject leadership to more intense scrutiny.

Very basic survey. Does not address shift work issues, workload, multiple missed lunches and chronic forced end of shift overtime.

Ministry of health should be following up on service with multiple complaints against its management with unfair practices and treatment of employees

700mhz. Some terrain not suited to 700MHz. 700 require additional towers vs. VHF. Everyone is quick to talk about interoperability, but the reality is if everyone is switching to common channels, these channels quickly become overcrowded.

Concentrate on improving everything for the patient since they matter and we don't. Please consider a standard to remove assholes (not just from the field, but supervisors and senior management as well).

The NOCP's are supposed to be the same across Canada. But I know for a fact Alberta does not follow this. A paramedic cannot currently get a license in AB without skills testing to get a practicing license. This is not supposed to be happening anymore & needs to change.

A HUGE movement has to be made to address PTSD in the paramedic population.

Take the decision making power away from the politicians and put it in the hands of medical professionals.

We should adapt to a better radio communication system - proper radio lingo; procedures; protocols, etc.

"All training should be equal and all provinces should accept the standard, not individual provinces curtailing abilities that people have trained for.

I believe there should be a standard workbook and flip book for each level of training. That lists what each level can do. This would also become a refresher for the paramedic. For example Paramedic Field Guide one for each level of training. EMR, PCP, ACP, CCP."

"Streamlining of education province-to-province including position titles and provincial testing.

Reevaluation of national exam - poorly conducted; irrelevant questioning with no opportunity for review; not distributed by anyone in the medical industry."

off loads in busy hospitals could be done by EMT/EMRs, give them ToFs and could also be used in community paramedic

Not falling behind in technology standards (compared to the U.S.A)

A mechanism should be in place to require and enforce compliance through accreditation

"Portability of education from province to province, service to service. A PCP in Manitoba should be able to go to Ontario or Quebec or BC or wherever without having to jump through hoops or ""upgrading""

A PCP is a PCP no matter where you go."

It would be nice to see Paramedics carry the TOF's with them so they can assist other medics in a situation where the Paramedic's on truck do not have the TOF's. Example- at a car accident where medics do not have any pain management or even the transfer for IV's.

Currently each province and each regulator is allowed to set their own scope of practice standards for each educational level. This is something that needs to be standardized along with the educational requirements discussed earlier. I recognize that the NOCPs are in place, however there is nothing ensuring regulators follow them.

Professionalism and uniform dress/deportment, ceremonial and memorial standards

Standards should take into account the gaps in funding and scope of practice of personnel between urban/densely populated areas and rural/remote/sparsely populated areas. Standards that are achievable in an urban setting may not be in a rural/remote area.

Be careful. Policing causes rules and rules are dictatorship. I am trained to save your life. I can't if you tie my hands with unnecessary rules. Peace out.....

Would be nice to have a national level scope of practice where every province is equal and the ability to interchange where you're able to work.

Pay rates should be at par and computer pcrs for rural paramedics

Every medic across Canada should have the same training and capabilities at certain levels i.e. pcp icp acp emt should be phased out or moved to just stable land ifts and not be on a primary unit ems should be self-governed across Canada as well

"Any charge of a criminal offense while practicing as a paramedic should result in an immediate suspension of your license as a standard.

Also, there should be a maximum number of attempts to challenge the provincial exam. After the 3rd attempt there should be a waiting period of a minimum of 2 years along with a mandatory refresher course. We need to aim for higher standards consistently across the country."

My concern as a new medic is that the standard of care in Manitoba is not up to national standards. Paramedics here are hand cuffed and very stagnant. Paramedic standards in all aspects of care and equipment should be standardized at an optimal level allowing medics to easily transition between provinces and all the public to have the best care possible no matter where they are.

Look forward to the outcome of your much appreciated efforts. Thanks!

"National standard for ACP.

Training opportunities in health regions for ACP.

More, more training.

what is being accomplished by the CPS, we need to hear.

Needs to be a standard that addresses level of service/response times based on population, geography and access to other medical services.

same uniform color across the country, hi-viz

Ensure that EMS / Paramedic Services continue to grow and progress and resist at all cost the PR tactics of professional firefighting associations and unions advocating for fire-based EMS which is not in the best interest of paramedicine. Fire-based EMS is only to ensure job security of current fire based systems. GO EMS!

An example: Interassociation Rescue in Switzerland has issued guidelines for the quality of prehospital care (<http://ivr-ias.ch>) website in German and French, see under « Prestation » and « Qualité ». Not particularly the best, but gives ideas. Good luck!

Transfer of care definition and time standard

Provincial self-regulation

"In targeting the areas previously noted in this survey there appears to be a lack of understanding re: the existing role of unions, professional registration groups and medical direction. This lack of understanding is likely to cause conflict if not done collaboratively. The targeting of telecommunications field would be of use.

Should also have province wide union and association similar to police and fire

I am trying in my mind to differentiate between the issue of standards vs best practices. My responses are related to the concept of national standards, many items do not lend themselves to this and value is not added by creating the standard. Best practices are another issue.

Ontario colleges produce far too many graduates a year without jobs to be had. On average in Windsor 25 student graduates each year with only 8 being hired. The paramedic field is very flooded in all of Ontario. Chatham Kent will hire 4 or 5 paramedics a year while still graduating 20 a year.

I think there should be standards for rural EMS a lot of the focus is on urban EMS. I can see it being this way due to call volumes but urban areas have the facilities where the definitive treatment takes place rural areas can be hours away from these facilities. Non-private rural EMS services (in Saskatchewan) are usually underfunded, under equipped, & under staffed. We need standards in place to fix this so we can provide the same level of patient care patients receive in the urban areas.

Annex C – Inventory of Sources and Bibliography

Canada

EMS Chiefs of Canada

<http://www.emscc.ca>

Paramedic Association of Canada

<http://paramedic.ca/>

Canadian Recommended Equipment List (REL)

<http://psprc-crpsp.ca/EN/REL/IntroREL/Pages/default.aspx>

Defence R&D Canada – Science and Technology

www.drdc-rddc.gc.ca/drdc/en/sciences/

Canadian Capability Based Planning

www.cdn-cbp.org/

Public Safety Canada

www.publicsafety.gc.ca/

The Defence R&D Canada – Centre for Security Science (DRDC CSS)

DRDC-CSS is a joint endeavour with Public Safety Canada that provides science and technology (S&T) support and services to address Canada's public safety and national security priorities.

www.drdc-rddc.gc.ca/drdc/en/centres/drdc-css-rddc-css/

Toronto EMS

<http://www.torontoems.ca/>

Ambulance Paramedics of British Columbia – CUPE 873

<http://www.apbc.ca/about-us/>

U.S.

Responder Knowledge Base – home site of Authorized Equipment List

www.rkb.us

The US InterAgency Board - home site of the Selected Equipment List

www.iab.gov

US Coordinating Partner of REL

www.tswg.gov

National Institute for Occupational Safety and Health

<http://www.cdc.gov/niosh/>

American Ambulance Association

www.the-aaa.org

American College of Emergency Physicians

<http://www.acep.org/>

Commission on the Accreditation of Ambulance Services

www.caas.org

International Association of Fire Chiefs

www.iafc.org

International Association of Fire fighters (IAFF)

www.iaff.org

National Association of EMTs

www.naemt.org

National Association of EMS Physicians

www.naemsp.org

National Association of State EMS Officials

www.nasemsd.org

The National Highway Traffic Safety Administration (NHTSA)

www.nhtsa.org

National EMS Management Association

<http://nemsma.org/>

Continuing Education Coordinating Board for Emergency Medical Services

<http://cecbems.org/>

Commission on Accreditation of Medical Transport Systems (CAMTS)

<http://www.camts.org/>

The National Academies Transportation Research Board (TRB)

EMS Transport Safety ANB10(5)

<http://www.trb.org/Main/Home.aspx>

National Academy of Emergency Dispatch (IAED)

<http://www.emergencydispatch.org/>

National Registry of Emergency Medical Technicians

<http://nremt.org/>

Commission on the Accreditation of Ambulance Services (CAAS)

www.caas.org

The EMS Safety Foundation

www.emssafetyfoundation.org

Objective Safety

www.objectivesafety.net

National Emergency Management Association

<http://www.nemaweb.org/>

International Association of Emergency Managers

www.iaem.com

Advocates for Emergency Medical Services

<http://www.advocatesforems.org/>

Emergency Nurses Association

<http://www.ena.org/Pages/default.aspx>

National Association of Emergency Medical Technicians

<http://www.naemt.org/>

National Association of State Emergency Medical Service Officials

<http://www.nasemso.org/>

National Emergency Medical Services Management Association

<http://nemsma.org/>

National Registry of Emergency Medical Technicians

<http://www.nremt.org/>

Association of Public Safety Communications Officials

http://www.apco.ca/about_e.html

EMT Resources website

www.emt-resources.com

EMS World

www.emsworld.com

Best Practices in Emergency Services – Magazine

<http://www.emergencybestpractices.com/>

Wilderness Emergency Medical Services

www.wemsi.org

American Heart Association

<http://www.heart.org/HEARTORG/>

American Red Cross

<http://www.redcross.org/>

Centers for Disease Control and Prevention

<http://www.cdc.gov/>

Department of Health and Human Services

<http://www.hhs.gov/>

EMedProfessional

<http://www.emedprofessional.com/>

International Association of Fire Fighters

<http://www.iaff.org/>

International EMS

<http://www.international-ems.com/>

National Association EMS Educators

<http://www.naemse.org/>

National Fire Protection Association

<http://www.nfpa.org/>

Prehospital Care Research Forum

<http://www.pcrf.mednet.ucla.edu/>

Emergency, Fire/Rescue & Police Magazine

<http://www.efpmagazine.com/>

JEMS Emergency Medical Services

<http://www.jems.com/>

Paramedic Network News

<http://paramedic-network-news.com/>

Paramedic.com website

<http://www.paramedic.com/>

International

International Roundtable on Community Paramedicine (IRCP)

www.ircp.info

International Medical Life Support

www.intmedical.org

United Kingdom

UK Department of Health

<https://www.gov.uk/government/organisations/department-of-health>

Paramedic Resource Centre

www.paramedic-resource-centre.com

Joint Royal Colleges Ambulance Liaison Committee

www.jrcalc.org.uk

Royal College of Physicians

www.rcplondon.ac.uk

British Paramedic Association (College of Paramedics)

www.britishparamedic.org

Association of Ambulance Chiefs Executives

www.ambulanceleadershipforum.com

Ambulance HART (Hazardous Area Response Team)

www.ambulancehart.org.uk

National Institute for Clinical Excellence

<http://www.nice.org.uk/>

Emergency Medical Journal

<http://emj.bmj.com/>

Journal of Accident & Emergency Medicine

<http://www.jnlaem.com/>

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<http://www.basics.org.uk/>

Health Professions Council (HPC,Paramedics Board)

<http://www.hpc-uk.org/aboutus/cpsm/>

Resuscitation Council (UK)

<http://www.resus.org.uk/>

Trauma Care

<http://www.traumacare.org.uk/>

College of Paramedics

<https://www.collegeofparamedics.co.uk/>

Ambulance999

<http://www.ambulance999.co.uk/>

Paramedic Practitioner

<http://www.paramedicpractitioner.com/>

UK Ambulance Forum

<http://www.ukambulanceforum.com/>

Ambulance UK

<http://www.ambulanceukonline.com/>

Independent Ambulance Association

<http://www.iaauk.org/>

Ambulance Technician Study

<http://www.ambulancetechnicianstudy.co.uk/>

Australia – New Zealand

Paramedics Australia

www.paramedics.org.au

The Council of Ambulance Authorities (CAA)

www.caa.net.au

National Ambulance Sector Office, New Zealand

www.naso.govt.nz

Ambulance Service of South Wales

www.asnsw.health.nsw.gov.au

Community Emergency Response Team

Australasian Registry of Emergency Medical Technicians

<http://www.aremt.com.au/Index.php>

Paramed Ambulance Ltd / Paramed Rescue Ltd

<http://www.paramed.co.nz/>

Australasian Ambulance magazine

The Council of Ambulance Authorities

www.caa.net.au

2013 Australasian Guidelines for Transport of Critically Ill patients

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Other Countries

Israel

www.ambulanceisrael.com

Italy

[Italian Red Cross](http://www.crociarossa.it)

National Association for Public Assistance

Netherlands

www.nederlandsambulanceinstituut.nl

Poland

["LPR homepage \(in Polish\)".](http://www.lpr.gov.pl)

["Polish EMS Education website"](http://www.pems.org.pl)

["Polish National Fire Service website \(translated from Polish\)"](http://www.pnfspolska.pl)

["Polish Society for Emergency Medicine website \(in Polish\)"](#)

Austria

[Austrian Red Cross](#)

Portugal

The Portuguese Integrated Emergency Medical Service (IEMS)

<http://www.inem.pt>

Spain

[Spanish National Health System](#)

France

[SAMU de France](#)

Paris Fire Department

<Http://www.pompiersparis.fr/>

South Africa

The South African Red Cross Society

<http://www.redcross.org.za/>

Health Professions Council of South Africa

www.hpcsa.co.za

Medic Zone - South Africa

www.mediczone.co.za

Ukraine

In Ukraine, emergency medical services are provided by the **Ukrainian Emergency Medical Services (UEMS)**,

Health Ministry of Ukraine

<http://www.moz.gov.ua/ua/portal/>

State Emergency Service of Ukraine

<http://www.mns.gov.ua/>

Norway

Land ambulance service provision is funded by the national government, and provided by means of one of the four Regional Health Authorities which provide most healthcare in Norway.

[Southern and Eastern Norway Regional Health Authority,](#)

[Southern Norway Regional Health Authority,](#)

[Western Norway Regional Health Authority,](#)

[Northern Norway Regional Health Authority\)](#)

South America

SOS Latin America Ambulance is one of the largest ground and air ambulance service providers in South America

<http://soslatinamerica.com/>

Related Articles and Publications

EMS Chiefs of Canada publications

Canadian National EMS Research Agenda

[EMSCC White Paper](#)

[EMSCC Backgrounder](#)

[CBRNE Paramedic Profile](#)

[Tactical Paramedic Profile](#)

Paramedic Association of Canada

National Occupational Competency Profile

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Emergency Medical Services - Agenda for the Future

National Highway Traffic Safety Administration (NHTSA)

Emergency Medical Services - Agenda for the Future: A systems Approach

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Strategy for a National EMS Culture of Safety

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A Leadership Guide to Quality Improvement for Emergency Medical Services (EMS)Systems

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American Ambulance Association June 2013

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Dean Cole Nebraska EMS/Trauma Program Administrator

Webcast - Ambulance Innovations from Europe

JEMS

<http://www.jems.com/webinar/2020vision/ambulance-innovations-europe>

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Associate Professor Peter O'Meara, Charles Stuart University

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Board for Critical Care Transport Paramedics (BCCTPC) May 2009

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N.R. Levick, M. Garigan

Department of Emergency medicine, Maimonides Medical Centre, New York, NY

B2 Paramedic Helmet Review

Paramedic Blog – EMS Technology News

The Lack of Good Paramedic & EMT Protective Equipment

Paramedic Blog – EMS Technology News

Equipment for Ambulances

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OSHA

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The Council of Ambulance Authorities

www.caa.net.au

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National Association of Emergency Medical Technicians

http://www.naemt.org/about_ems/CommunityParamedicine.aspx

<u>Title</u>	<u>Description</u>	<u>Categories</u>
CP/MIHC Online Interactive Map	Interactive map created of all community paramedicine and mobile integrated healthcare programs reported through the survey.	Research
2013 Community Paramedicine/Mobile Integrated	Results to survey distributed to NAEMT Members Summer 2013	Research

<u>Healthcare Survey Summary</u>		
<u>Bibliography of Community Paramedicine Articles</u>	Compiled by Gary Wingrove	Research
<u>Community Paramedicine</u>	Video produced by Allina Health System in St. Paul describing the Community Paramedicine program there.	Program Description/Tools
<u>FAQ On ACOs: Accountable Care Organizations, Explained</u>	By Jenny Gold, KHN Staff Writer	Reimbursement Models
<u>What Community Paramedicine is and Why it's the Future of our Profession</u>	Matt Zavadsky's article describing the present and future roles of community paramedicine.	Program Description/Tools
<u>Expanding Paramedic Scope of Practice in the Community: A Systematic Review of the Literature</u>	A systematic review of the international literature to describe existing community paramedic programs.	Research
<u>Innovation Opportunities for Emergency Medical Services</u>	A white paper presenting one example model of the potential for cost savings if EMS systems adopted protocols & strategies to innovatively triage & treat patients.	Suggested Program Policies
<u>Community Paramedicine: A Promising Model for Integrating Emergency Primary Care</u>	California EMSA's analysis of the status of Community Paramedicine.	Suggested Program Policies
<u>Community Paramedicine for Fire-Based Systems</u>	IAFF official discusses how fire-based systems can expand into community paramedicine.	Program Description/Tools
<u>MedStar Community Paramedicine programs</u>	Mobile Healthcare Programs - Overview of MedStars mobile programs	Program Description/Tools
<u>Innovations: What is Community Paramedicine</u>	This is an article from the Urgent Matters E-Newsletter (Spring 2013, Volume 10, Issue 2) describing Community Paramedicine.	Program Description/Tools
<u>Patient-Centered Out-of-Hospital</u>	Decoupling payment for care with transport to ER would improve patient-centered care, cut	Reimbursement

<u>Care Reimbursement Article</u>	costs	Models
<u>2012 NCCCP Meeting Summary</u>	Summarizes a conference held October 1-2, 2012 in Atlanta, Georgia. Includes training, practice, regulation, medical oversight, reimbursement, integration & evaluation.	Suggested Program Policies
<u>2013 NCCCP Research Agenda</u>	Paper identifies research priorities, challenges and resources. Also lists opportunities related to community paramedicine.	Research
<u>AHRQ Profile of MedStar Mobile Healthcare Innovation</u>	Report describes, Fortworth, TX provider, MedStar's, Community Paramedicine Program. It includes comparisons of 911 calls from program participants & estimates of the cost savings.	Program Description/Tools
<u>State and Community Strategies for Expanding the Primary Care Role of First Responders</u>	This article explains steps states are taking to use first responders to help with non-urgent chronic illnesses.	Suggested Program Policies
<u>EMS Collaborations with Healthcare</u>	Matt Zavadsky's presentation on EMS Collaborations with Healthcare	Suggested Program Policies
<u>Future of EMS Happening Now</u>	Matt Zavadsky's presentation on EMS Systems of the Future	Suggested Program Policies
<u>Community Paramedicine Insights Forum</u>	teleconference forum to discuss best practices and lessons learned	Suggested Program Policies
<u>Community Paramedic</u>	Link to Community Paramedic Program Web site	Suggested Program Policies
<u>International Roundtable on Community Paramedicine</u>	Promotes the international exchange of information and experience related to flexible and reliable health care services using novel health care delivery models.	Suggested Program Policies
<u>WECAD Community Paramedic Handbook</u>	This handbook is designed to help organizations start Community Paramedic Programs.	Suggested Program Policies
<u>State Perspectives Discussion</u>	Offers insight into the historical perspective and	Suggested Program

<u>Paper on Development of Community Paramedic Programs</u>	future considerations for Community Paramedicine Programs.	Policies
<u>EMS and Public Health Bulletin</u>	A Strategy for Enhancing Community Health Care	Suggested Program Policies
<u>Public Health and Emergency Medical Services: Intersections, Overlaps and Opportunities</u>	Overview assists both EMS & health professionals in developing & sustaining open & ongoing dialogue minding the health of the community to more quickly identify people at risk for disease & injury	Suggested Program Policies
<u>HRSA Community Paramedicine Evaluation Tool</u>	Weblink to the Community Paramedicine Evaluation Tool	Program Description/Tools